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## Columbia Basin BC Hydro Footprint Mapping BC Hydro Reference Number: DFIM040

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## Acknowledgements

This project was funded by BC Hydro's Columbia Basin Fish and Wildlife Compensation Program (CBFWCP) office located in Nelson, BC. Beyond the authors, whose areas of participation are specified below, we would like to thank the many other participants, all of whom were critical elements in the successful completion of this undertaking. The clients, John Krebs, Amy Waterhouse of CBFWCP and Albert Chirico of the Ministry of Sustainable Resource Management, Nelson, BC were always available for consultation and worked with our group in a positive way through some technically challenging issues. Greg Utzig offered his expertise in review of the ecosystem mapping as external Quality Assurance specialist and we appreciate his input. Sylvie Masse offered her expertise as an internal reviewer of the reach break mapping. Her input was timely and very useful. We are very grateful to Fred Theissen, MOF, Kamloops who lent us his original MS series mapping portfolio, without it the digitization of water and reaches would have been much more difficult.

External quality assurance was completed for each element of the project by individuals and organizations as indicated below:

Albert Chirico, MSRM

- stream digitization, reach break mapping

Mark Schnider, CBFWCP

- georectification of images and stream digitization

Amy Waterhouse, CBFWCP

- georectification of images and stream digitization, digital final products

Greg Utzig, P.Ag.

- ecosystem mapping

The roles of JMJ Holdings Inc. employees and subcontractors within this project are as follows:

Maureen V. Ketcheson R.P.Bio.

- Project coordination, ecosystem mapping and final report preparation, internal quality control

Kevin Misurak

- Spatial data capture, georectification of MS maps

Vicky Lipinski

- Data manager, air photo preparation and spatial data capture, internal quality control

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Gareth Kernaghan, Keyes Lessard

·Ecosystem mapping

Tom Dool, Lawson Bradley

·Water features and stream reach spatial data capture

Eric White R.P.Bio. (subcontractor)

·Stream reach delineation

Sylvie Masse R.P.Bio. (subcontractor)

·Stream reach internal quality control

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## 1.0 Introduction and Objectives

The Columbia Basin Fish and Wildlife Compensation Program identified Ecosystem and Stream mapping as a foundation for the analysis of the effects of flooding within the hydroelectric and water storage reservoirs in the Columbia Basin. The evaluation of the wildlife and fisheries ecosystems lost throughout approximately 700 km<sup>2</sup> of valley floor landscapes has been identified as the foundation for future analysis and reporting on those ecosystems. MJM Holdings Inc. was contracted to undertake the mapping of ecosystems, geo-rectification of historic MS map series for the flooded areas and the digitization of water features from the historic mapping. This report documents the methods used, and results of that process. Figure 1 illustrates the project area, subunits and map sheet numbers.

The specific objectives of this project are as follows:

1. to georectify 78 MS map series images in GEOTIFF format
2. to join these images as a mosaic

Thirty-nine map sheets also have the following specific objectives:

3. to map stream reaches and calculate their gradients using MS map water features
4. to digitize MS map water features
5. to map ecosystems and register them to the MS maps
6. to document the process and describe ecosystem map units in a final report

## 2.0 Methods

### 2.1 Geo rectification of GEOTIFF Images of the MS Series Mapping

The intention was to georectify all 78 map sheets and insets, using the same approach that was utilized in the pilot project (Dool and Misurak 2004) where geo rectification was completed on one example of the map image using a variety of different quantities of interior points for control. Although the change in RMS error was not significantly different for points greater than 10, we routinely utilized more than 10 points per map sheet. The individual RMS error was kept to less than 5.5 meters. It was insured that reference grid points used for geo rectification between the MS series maps and the TRIM data were not shifted as a consequence of going between software. All maps and indices were edge tied. The final projection of the maps is Albers NAD83. Maps were delivered in \*.tif and MrSid format.

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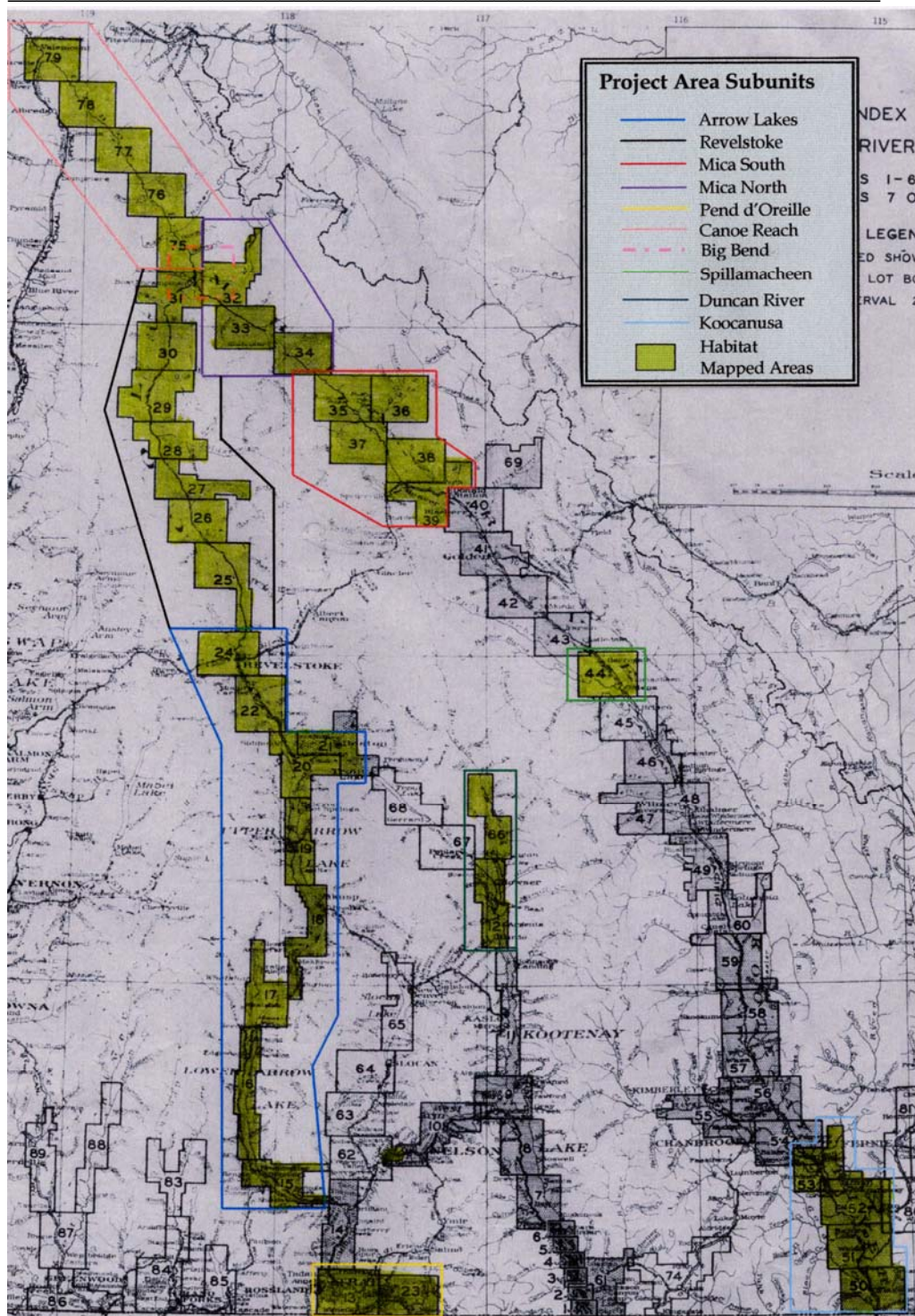


Figure 1. Study Area

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## 2.1.1 Standards

- Albers Equal Area as defined on:  
<http://srmwww.gov.bc.ca/gis/bceprojection.html>
- metadata is provided following the standards on:  
<http://srmwww.gov.bc.ca/gis/arcmetadata.html>

## 2.2 Mosaic of Georectified MS Series Digital Images

An individual map was georectified to lat/long NAD27 format. It is more effective to create the mosaic from the geo referenced lat/long NAD27 projection, as the map did not have the issues of empty space and map rotation that occur when the image is projected in Albers NAD83. The map was then clipped out and, using the four corner lat/long 's, was edge matched to adjacent maps. Once the lat/long mosaic was complete, it was re-projected to Albers NAD83 for final delivery.

The size of the entire mosaic exceeds a reasonable capacity for storage and delivery of the images. The project area was divided into ten subunits for efficient delivery of the mosaics, they are described in Table 1 and illustrated in Figure 1.

| Location       | MS Map Sheets     | File Name          |
|----------------|-------------------|--------------------|
| Arrow Lakes    | 15 – 24 inclusive | Arrow_alb.tif      |
| Revelstoke     | 24-31 inclusive   | Revelstoke_alb.tif |
| Mica South     | 35-39 inclusive   | Mica_south_alb.tif |
| Mica North     | 32-34 inclusive   | Mica_north_alb.tif |
| Pend d'Oreille | 13,23             | Pend_alb.tif       |
| Canoe Reach    | 75-79 inclusive   | Canoe_alb.tif      |
| Big Bend       | 31,32,75          | Bigbend_alb.tif    |
| Spillamacheen  | 44                | Spill_alb.tif      |
| Duncan River   | 12,66             | Duncan_alb.tif     |
| Koocanusa      | 50-53 inclusive   | Koocanusa_alb.tif  |
| Kootenay Canal | No MS coverage    |                    |

**Table 1. Project Area Subunits and Mosaic Naming Conventions**

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## 2.2.1 Standards

- Albers Equal Area as defined on:  
<http://srmwww.gov.bc.ca/gis/bceprojection.html>
- metadata is provided, following the standards on:  
<http://srmwww.gov.bc.ca/gis/arcmetadata.html>

## 2.3 Reach Break Identification

Stream reach breaks were digitized within the identified project area using the following methods. For all reaches longer than the minimum reach break length of 100 meters at the map scale (.3 cm on the 1:31,640 maps) the reach breaks were identified using air photos and the MS series maps where the scale is appropriate (specifications do not permit reach identification on map materials whose scales are smaller than 1:20,000). Reaches were digitized relative to the water and stream mapping on the MS series maps.

Reaches were determined by noting features such as channel pattern, confinement, gradient, bank and streambed materials. Significant changes in these elements are used to determine the reach boundary. Obstructions or barriers to fish distribution were identified as reach boundaries only if they are less than 100 m long and are consistent with changes in physical criteria used to define the reaches. It is important that reaches that significantly impact fish distribution include the short sections located on valley bottoms and near confluences with larger streams and lakes, and this was the case with the flooded areas we were mapping. This work was undertaken by an R.P.Bio. with specific expertise in fish ecosystems with quality assurance by an R.P.Bio. with specific expertise in reach mapping.

### 2.3.1 Standards

Mapping followed the standards and procedures identified in Fish and Fish Ecosystem Inventory Standards and Procedures section 2.4.4.1 as found in:

<http://srmwww.gov.bc.ca/risc/pubs/aquatic/recon/recce2c.pdf>

Each reach break was coded using the Standards for Fish and Fish Ecosystem Maps section 2.2:

[http://srmwww.gov.bc.ca/risc/pubs/aquatic/fishmaps2k1/fishmaps\\_april2001.pdf](http://srmwww.gov.bc.ca/risc/pubs/aquatic/fishmaps2k1/fishmaps_april2001.pdf)

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### 2.3.2 Data Capture

For each reach the FCODE, NID, UTM ZONE, EASTING, NORTHING, REACH\_NO, PTCLASS and ANGLE were recorded in a point attribute table. Reach numbering followed the criteria in section 2.4.4.2 of the Fish and Fish Ecosystem Inventory Standards. The first reach was recorded closest to the mouth of the stream. Remaining reaches within the study area boundary are numbered in an up-stream ascending order.

### 2.3.3 Reach Gradient Calculation

The reach gradients were determined using a rise over run calculation based on interpolation of MS map 20 foot contour intervals rounded to the nearest whole number for the downstream and upstream portion of the reach. This information, along with the length of each reach section were added to the reach point attribute table after the MS map water features were digitized and the reaches applied to that coverage.

## 2.4 Ecosystem Mapping

Within the defined study area boundary of 200 m horizontal distance<sup>1</sup> from the present day TRIM reservoir delineation provided by CBFWCP ecosystems were mapped on 39 MS series maps using a variety of pre-flood air photos as the basis for polygon delineation and attribution in areas not already defined as a stream, lake or river on the MS series mapping (see Stream Digitizing Section 2.5). MS series mapping presents polygons as being either coniferous, deciduous or scrub, but does not specify the variability within these polygons at an ecosystem specific level. A mapping legend for the flood area was created for the flood area mapping by Columbia Basin Fish and Wildlife Compensation Program. It is based on Ministry of Forest site series (Braumandl and Curran 1992) and is cross-walked to US Ecosystem Types (O'Neill et al 2001) and the BC Wetland classification (MacKenzie and Moran 2004). Using the legend located in Appendix 1 ecosystem polygons were delineated on the air photos. This is an approach modified from Terrestrial Ecosystem Mapping (TEM). As bioterrain mapping is lacking for the project area, the ecosystem mapper used the following protocol.

1. Locate the area of interest on both the air photo and the MS series map.
2. Delineate terrain breaks within the study area boundary on the air photo that directly affect the site series which potentially occur on that site paying particular

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<sup>1</sup> This distance was initially set at 500 m horizontal distance, but after completion of the Koocanusa subunit it was amended to 200 m.

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- attention to drainage (ie. even a site that is composed of coarse gravels could still support a wet valley floor site series).
3. Delineate breaks in ecosystem and, where appropriate, structural stage within that area.
  4. Give polygon a unique number.
  5. Attribute the ecosystem polygon using the database (see Appendix 2 and map legend (see Appendix 1) making sure to minimize polygon variability but avoid creating polygons less than 2 ha in size. Each polygon must be assigned at least one site series, structural stage, US ecosystem class, slope class, aspect class, forest type and cottonwood cover rating.
  6. Use decile proportioning to describe up to three site series or site series/structural stages per polygon, any ecosystems occupying less than 10% of the polygon can be noted in the comments section of the database.
  7. Make sure that all polygons are closed and that there are no gaps between polygons, insure that there is less than 3 mm overlap between transferred polygons and that feature on the MS series maps (ie. polygon boundaries were superimposed to features of water, wetlands, changes in slope or forest stand composition with NO gaps). Make sure that 100% of the study area within its boundary is allocated to a ecosystem polygon, lake, stream or wetland.

### 2.4.1 Standards

The format of the mapping and its associated database is based on the Standards for Terrestrial Ecosystem Mapping – Digital Data Capture as found on:

<http://srmwww.gov.bc.ca/risc/pubs/teecolo/temcapture/index.htm>

Standard for Terrestrial Ecosystem Mapping (TEM) - Digital Data Capture in British Columbia Version 3.0

Errata No. 1

Each ecosystem polygon was greater than 2 hectares in size (6 x 6 mm at MS map scale), unless it was a wetland, in which case the maximum size for a unique wetland polygon was 1 hectare (3 x 3 mm at MS map scale). Distinct features smaller than this were included in a larger polygon and described as a proportion of that polygon.

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## 2.4.2 Data Capture

### 2.4.2.1 Ecosystem Database

Data attributes recorded for each polygon, as described in Appendix 2 are:

Polygon number  
MapID  
Ecosection  
BEC Zone  
BEC Variant  
Decile1 proportion  
    Site series 1 alpha code  
    Site series 1 numeric code  
    CB Class (US ecosystem class)  
    Wetland class  
    Slope class  
    Aspect class  
    Structural Stage  
    Forest type  
    Cottonwood presence  
Decile 2 proportion  
    Site series 2 alpha code  
    Site series 2 numeric code  
    CB Class (US ecosystem class)  
    Wetland class  
    Slope class  
    Aspect class  
    Structural Stage  
    Forest type  
    Cottonwood presence  
Decile 3 proportion  
    Site series 3 alpha code  
    Site series 3 numeric code  
    CB Class (US ecosystem class)  
    Wetland class  
    Slope class  
    Aspect class  
    Structural Stage  
    Forest type  
    Cottonwood presence  
Comments

Each polygon within the study area has a unique polygon number, this includes wetlands, two line water features and lakes. There is a one-to-one relationship between each polygon and its associated attribute table.

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### 2.4.2.2 Ecosystem Polygon Digitization

#### 2.4.2.2.1 Scan aerial photographs and ecosystem linework

The pre-flood aerial photos were scanned at a resolution of 300 dpi, allowing for an output resolution of 1.0 m. The ecosystem linework, drawn on a separate piece of mylar, had been registered to the air photo fiducial points and was indicated with dots. The mylar was scanned in separately as Line Art at a resolution of 72 dpi. This was an acceptable resolution due to the coarseness of the linework.

The scanned files were saved as a TIFF file, <photo\_number>.tif.

#### 2.4.2.2.2 Prepare the digital air photos

In PCI XPACE all of the air photos were imported in to a .pix file, which is the native file format for PCI, using the FIMPORT command. Next the air photos that were phototyped had another channel added using PCIMOD which will contain the linework.

#### 2.4.2.2.3 Register the linework

In PCI GCPWorks the linework file was registered to the air photo using the fiducial points on both the air photo and the mylar as the reference points.

#### 2.4.2.2.4 Create orthophotos

The GCPs were collected from the georectified MS maps using PCI's OrthoEngine, Polynomial modeling. Points used were features such as roads, road junctions, stream/river confluences or a unique shoreline feature. Only the portion (as defined by an imposed rectangular boundary) of the air photo that had been bioterrain mapped was used to collect GCPs.

As the MS maps primarily describe river features, collecting GCPs further away from the river could, at times, be problematic. However, after four GCPs are collected, OrthoEngine automatically calculates the RMS error for each GCP, which is then corrected by moving the GCP to reduce the error. The RMS error for each air photo was below one for both the X and Y. Once a suitable number of GCPs with a low RMS error was derived an orthophoto was created.

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### 2.4.2.2.5 Ecosystem linework extraction

In order to edit the ecosystem linework it was extracted from the \*.pix file. This was done in PCI Image Works using the File-Utility-Tools-Subset option and selecting the second channel that contains the linework. The linework was saved as a TIFF file.

### 2.4.2.3 Ecosystem linework

#### 2.4.2.3.1 Linework preparation

The \*.tif file was opened in ArcView (V.3.1) and converted to a grid using the Theme - Convert to Grid function. Next the grid was reclassified so that the linework was 1 and everything else was a 0, or no data. Using the Analysis - Reclassify function values from 0-10 were specified as 1 and 11-254 were specified as No Data. This reclassified grid was then saved as another grid using the Theme - Convert to Grid function.

In Arc/INFO (V8.1) the grid was converted using the GRIDLINE which converts a grid representing raster line features to a line coverage.

```
Arc:gridline <in_grid> <out_cover {positive / data} {thin / nothin} {nofilter / filter}
{round/ sharp} {item} {thickness} {dangle} {weed}
```

```
Arc:gridline <in_grid> <out_cover> positive thin filter round # 28 0 2
```

Next CLEAN was used to generate a coverage with arc topology and to eliminate dangling arcs.

```
Arc: clean <in_cover> {out_cover} {dangle_length}{fuzzy_tolerance}{poly/ line}
```

```
Arc: clean <in_cover>{out_cover} 28 .01 line
```

#### 2.4.2.3.2 Edit the linework

In ArcEdit, the coverage was opened and linework was edited to eliminate additional dangles and gaps. Some editing was necessary as thin sinuous lines were often pinched in spots during the transformation from a grid to an arc coverage.

Once the linework was edited, linework from air photos in an area (i.e. 1:20 000 map sheet) was appended together using the APPEND command.

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*Arc: append <out\_cover> {feature\_class}*

*Arc: append <out\_cover> line*

Next it was necessary to edit the linework again to make the arcs contiguous between air photos.

### 2.4.2.3.3 Labeling

When the ecosystem linework for an area was completed it was opened in Arcview. A new point theme was created. Labels were added and numbered to match with the polygon numbers previously assigned.

### 2.4.2.3.4 Create polygons

Once the linework and labeling was completed the point shape file was converted to a label coverage and was inserted into the linework coverage using the PUT command in ArcEdit. Next the coverage was cleaned using CLEAN and then built into a polygon coverage using BUILD.

### 2.4.2.3.5 Internal Quality Control of Ecosystem Linework

Internal quality control occurred throughout the spatial data capture process as documented above.

## 2.4.3 Internal and External Quality Control Ecosystem Mapping

Internal quality control of ecosystem mapping was completed on a regular basis. Each sheet of ecosystem mapping was either mapped by an R.P.Bio. with direct experience in TEM and at least five years of direct field and air photo based mapping experience in the BEC variants covered by the MS series mapping or by a RISC certified TEM mapper with the above direct experience in the field and in TEM mapping. There was no opportunity to verify the ecosystem mapping in the field, so the mapping can only be considered to be reconnaissance level mapping, with no field verification, only air photo verification according to the TEM mapping standards.

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External Quality Assurance was completed by a P. Ag with field experience in the project area. Comments from QA reports were received and integrated in the final maps. For the external Quality Assurance interim and final reports please contact the client.

### 2.5 Stream Digitizing

All the streams, lakes, rivers and wetlands were digitized for delivery in .e00 format within the defined project area boundary for the 39 map sheets slated for ecosystem and stream reach mapping.

#### 2.5.1 Standards

This digitizing followed the standards outlined in the TRIM mapping standards as described in:

<http://srmwww.gov.bc.ca/bmgs/trim/1to20specs/specs20.pdf>

The following standards were used:

- Right hand rule
- Downstream rule
- Continuity rule
- Polygon rule where a swamp meets a lake or river
- Connectivity and network rule

#### 2.5.2 Data Capture

Stream data was captured using on-screen digitizing in Arc/INFO 8.1 using the georectified MS series map images as a backdrop.

The IMAGE command was used in Arc/EDIT to display the MS series map images:

*IMAGE* <image | image\_catalog> *COMPOSITE* <red\_band> <green\_band>  
<blue\_band>

such that:

*IMAGE ms37 COMPOSITE 1 2 3*

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This enabled the operator to zoom into the water feature and ensure a fit to the georectified MS maps that meets or exceeds the required 0.5mm (15.84m) error restriction. This allowed the operator to zoom in on complex segments, digitizing at a scale that would be impossible using hardcopy paper maps at a fixed scale.

The methods used to digitize required water features were:

- Obtain georectified image of each MS series map
- Starting in the northwest corner of the mapsheet, digitize all required features to the relevant standards
- Manual review of digitized linework to check for obvious errors
- Clean up linework in Arc/INFO
- Assign FCODE to each line

### 2.5.3 Database

Stream layer attributes include the following:

- FNODE\_
- TNODE\_
- LPOLY\_
- RPOLY\_
- LENGTH

The below are generated by Arc/INFO:

- FCODE
- SOURCE
- GRADIENT

FCODEs were generated from the following source:

[http://srmwww.gov.bc.ca:8000/pls/feature\\_code/FCODE.queryList](http://srmwww.gov.bc.ca:8000/pls/feature_code/FCODE.queryList)

### 2.5.4 Stream Gradient Attribution

Stream reach breaks were snapped to the digital water features and the length of each stream reach calculated using dynamic segmentation principles to intersect the stream arcs. The gradient of each reach was calculated from the previously recorded, interpolated MS map elevations recorded for each reach break. As the project area lacks a Digital Elevation Model (DEM), reach gradient calculations are only as accurate as the interpolations derived from the 20 foot contour intervals of the MS maps.

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## 2.6 Digitization Procedures and Standards

### 2.6.1 Feature Codes

All polygons and line features have an associated 'FCODE' assigned. The base layer for the TEM mapping were the water features digitized from the MS series mapping. Ecosystem polygons that are bounded by a water feature used the water feature's linework and its associated 'FCODE' as part of that polygon's delineation rather than re-delineate or re-digitize that line. This insures that the ecosystem polygons are congruous with the MS series water.

The Fcode is stored in a 10-character item consisting of two uppercase letters and eight digits in the associated arc or polygon attribute table. The following 'FCODE's were used within the ecosystem polygons:

- study area boundary WI25100110
- ecosection boundary WI25400500
- BEC variant boundary WI23000130
- ecosystem boundary WI25200100
- when boundaries from another feature (such as a lake) form part of a boundary the original FCODE should be retained
- polygons that have not been mapped and represent a "null" value were assigned an FCODE of XX0000000
- All arcs , other than water features, FF84555000

All of the feature codes conform to the coding scheme outlined in Volume 1 of the Second Draft Report of the National Standards for the Exchange of Digital Topographic Data, July 1984 and as listed in:

<http://srmwww.gov.bc.ca/gis/featurecodes.html>

### 2.6.2 Polygon Numbering

As stated above, each polygon has a unique polygon number. The unique identifier is entered into the spatial attribute table within the polynum field and the non-spatial attribute tables with a one-to-one relationship between the polygon and its associated attribute tables.

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### **2.6.3 Data Capture Tolerances**

Fuzzy tolerance was set to 2 meters for cleaning and building the polygonal layer. The dangle tolerance was set to 20 meters. Minimum wetland polygon size is one hectare, minimum non-wetland polygon size was two hectares.

### **2.6.4 Projection**

The final coverages were projected into Albers Equal Area as defined on:

<http://srmwww.gov.bc.ca/gis/bceprojection.html>

### **2.6.5 Digital Deliverables Standards**

Digital deliverables will meet standards as outlined in:

<http://srmwww.gov.bc.ca/gis/GISdatastds.html>

This will follow specific Arc/INFO data standards as outlined in:

<http://srmwww.gov.bc.ca/gis/arcddata.html>

## **3.0 Internal Quality Control and External Quality Assurance**

### **3.1 Professional Sign-off and External Mapping Quality Assurance**

Within the working team, each day's work is reviewed by an R.P.Bio. and modifications made to outputs on a regular basis. Materials were released to the client on a regular basis for external Quality Assurance. All efforts were made to insure that materials met the specification within the contract before being sent for external Quality Assurance. Early and iterative QA activities (see Section 4.0 below) assisted in keeping lines of communication open between the client and consultant such that any technical "grey areas" were clarified early in the mapping process.

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### 3.2 GIS Internal Quality Control Procedures

#### 3.2.1 GeoTif Procedures

As each geotiff was produced a visual check was done and the RMS error report examined to ensure the degree of quality required was being met. Internal QA by Kevin Misurak either approved the work or returned the image for improvements. Final images were then submitted to external QA personnel.

#### 3.2.2 Reach Break Points

Reach break points were examined before digitization by Sylvie Masse R.P.Bio. to ensure that they were in the appropriate locations. Internal QA either accepted the work or returned the reach break mapping for improvements. Reach break points were then digitized following the methods and standards documented in Section 2.3, this work was checked by Tom Dool and either approved or returned for edits. Final reach points were reviewed and approved by Tom Dool before submission to external QA personnel.

#### 3.2.3 Water Streams and Wetlands

Appropriate digitizing practices as documented in Section 2.5 were followed and checked by supervising GIS personnel. As each map sheet was completed it was passed or returned to the mapper for revisions. They checked to ensure all linework was appropriate after edits were completed and the map was considered complete.

#### 3.2.4 Ecosystem Polygons

A selection of typed photos, databases and draft spatial data capture maps depicting ecosystem polygons were checked on a regular basis by Maureen V. Ketcheson R.P.Bio. to ensure that the correct features were being captured as per the map legend found in Appendix 2 and that methods used for ecosystem mapping as documented in section 2.4 were applied consistently. Upon receipt of external QA reports, mapping was revised by the original mapper and reviewed by Ketcheson. Comments were generated and improvements made to the mapping. Mapping not reviewed externally was checked and rendered consistent with external QA comments.

### 3.2.5 Meta Data and Final Deliverables

The final deliverables were checked against all of the cited standards to ensure that the project requirements were met.

## 4.0 Discussion of the Mapping Process

This project has been unique and challenging. It differs from most modern digital spatial data capture and mapping processes because it lacks TRIM digital elevation data and TRIM water, as well as ground truth data for checking the reliability of reach break and ecosystem polygon attributes. This section discusses the challenges and consequences of those challenges to the mapping process and result.

### 4.1 Geo rectification and Mosaic of GEOTIFF Images

As the digital version of the MS maps are derived from 50 year old paper maps, (storage condition unknown) which were then scanned on a flatbed scanner, some distortion is to be expected. Due to this, more GCPs were collected around the borders of each map in order to facilitate the creation of a seamless mosaic.

Once the georectified maps were produced, mosaics of the subunits were created. The mosaics were created in latitude/longitude projection as it was easier to trim the surrounding border on the maps and to mosaic them together. As individual TIFFs the images were loaded in ArcView to investigate which order the TIFFs should be placed in the mosaic in order to create the best product.

Although great care was taken, there may be instances where there are slight gaps between MS maps, none of which prevent map interpretation. It should be noted that there were occurrences where longitudinal lines did not match up, although a few minutes either way they would.

### 4.2 Reach Break Mapping

The reach breaks were identified by qualified fisheries biologists. The biologists annotated paper maps of the study area noting the break number and elevation of each break. The breaks were then digitized in on screen ArcView 3.1. Fcodes were assigned according to the type of reach break identified by the biologists. The list of available Fcodes was provided by CBFWCP Staff. The line segments of the water features

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characterized by each system of breaks was assigned a set of unique ID's called the ILP and then split to identify the length of each individual reach. Using the length of the reach and the difference in elevation of the start and end point of the reach breaks, the gradient of each stream segment was calculated. Each break has been assigned a unique ID that identifies the water feature it is found on. This attribute is the ILP. The reach breaks and the ILP coverage were then formatted for delivery using the MSRM data standards.

### 4.3 Ecosystem Mapping

#### 4.3.1 Map Reliability

The reliability of the mapping can be inferred through the short comings within the map legend and data sources. This can be related ultimately to the interpretations that the final mapping will support.

The ecosystem map legend evolved as mapping proceeded and external QA comments were received. The predominant issue around this mapping is the lack of field data describing the relationship between flood plain physical characteristics and site series classification. The ecosystems that were in place before the flood plains were inundated are rare in the present day landscape. The Columbia Basin is an area of high relief with narrow valleys, consequently, level ground and flood plain ecosystems are rare, and where present are often disturbed by human activities such as settlement, golf courses, pastures and transportation corridors. Site series classifications (Braumandl and Curran 1992) were not particularly elaborate in these areas. Not only are undisturbed flood plains rare in the post flooding era, but Ministry of Forests priorities for site series classification were with upland sites, suitable for forestry, during the development of the field guides.

A secondary, but equally important issue related to map reliability was the quality of the air photos used for ecosystem mapping. Table 2 itemizes by map sheet details about air photos and MS map coverage provided for that portion of the mapping and the consequences to the mapping. In general the following problems with the air photos complicated mapping:

- photos were not the source photos used in the MS mapping
- flood plains had changed between the era of the MS map and era of the photo used for this project
- photo water features did not always match MS water features
- photos were often in poor condition and lacked reliable stereo coverage
- flight lines were oriented diagonally across study area causing distortion
- season of photo varied within a single study area

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The combination of photo quality and lack of field data resulted in the photo typing being more or less an “educated estimate” for each attribute in the database. QA discussions were based on “opinion” rather than data, every effort was made to make the mapping consistent with the interpretation of site series/site feature relationships expressed by the external QA personnel. What follows is a discussion of issues related to the above relative to columns in the database used for ecosystem description found in Appendix 2.

### 4.3.2 BEC Variant

At the onset of mapping BEC variant coverage provided by the BC Ministry of Forests was superimposed on the MS maps within the prescribed mapping buffer. This coverage was based on legacy maps originally intended to be depicted at 1:250,000. When superimposed on MS series maps (scale varied, but approximately 1:32,000) BEC lines proved to be inappropriate and, after review of the Kooecanusa mapping, were adjusted by the ecosystem mappers to better reflect natural landscape boundaries between BEC variants and to prevent unnatural subdivisions within ecosystem polygons. The BEC line was relocated within the mapping buffer with consideration to MS map water (ie. down the centre of the river) changes in aspect and slope (ie. wetter variant moved to cool aspects) or natural landscape shape features. The consequence of adjustment of the BEC lines is that they will not longer match BEC lines used in Ketcheson et al 2001 as the basis of the US Habitat Type mapping project, and to the BEC used in the Arrow TSA PEM (Ketcheson et al 2003), East Kootenay PEM (Ketcheson et al 2002) and Invermere PEM (Ketcheson et al 2004) so if this data is compared to the flood area mapping during subsequent interpretive exercises there will be discontinuities between the BEC linework.

### 4.3.3 Ecological Classification

The expanded map legend in Appendix 1 and map legend in Appendix 2 describe each ecosystem mapped in the project area relative to their BEC variant, site series, US habitat class, structural stage, modifiers, stand type and, if applicable, wetland class and cottonwood presence. It is certain that there were ecosystems within the flood area that are not adequately described by the site series classification as published by the BC Ministry of Forests. This is especially true for wetlands and floodplain micro site ecosystems. The classification utilized in this project for wetlands lacks enough detail to differentiate between the vast number of diverse wetlands that likely existed in the project area pre-flooding. Most wetlands are classified as WE at the site series level, with graminoid versus shrub dominated wetlands recognized at the structural stage level. The wetland classification (MacKenzie et al 2004) is applied at the Site Class level, recognizing Fen (Wf), Marsh (Ms), Swamp (Sw), Shallow-waters (Ws), Flood Associations (Df) and Shrub-carr Transition Association (Tn). Definitions of these Site Classes can be found in the Appendix 3.

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In situations where the mappers could not distinguish between non wetland site series that occur in similar ecological circumstances a map unit was developed that predicts the possibility of up to three site series occurring within a relatively small area such as narrow toe slopes, or in larger areas such as flood plain mosaic ecosystems. An example of this occurs in the ICHmw2 where RD (06), RH(07), and RS (08) are mapped individually as well as combined to form XX (00) for areas where individual distinction is difficult. Descriptions of these complex map units can be found in Appendix 1 and Appendix 2.

The US Habitat classes used in this project were developed for mapping at much smaller scales than that of this project. However, if the next level of classification “habitat elements” (O’Neil et al 2001) within that system is interpreted and “cross-walked” to the BEC system, it will be possible to use this mapping at a more detailed level within the US Habitat Database at the critical habitat elements level (O’Neil et al 2001).

Interpretation of stand structure was complicated by the inconsistency of air photo quality. In some areas stands were being harvested to make way for the flooding, thus structural stage calls do not reflect pristine, pre-flood circumstances. In other areas, like the Koocanusa the valley floor destined for flooding was under cultivation or grazing.

Interpretation of stand composition and slope class was also complicated by photo quality and lack of field data.

Table 2 below describes specific issues about the air photos and base maps and their consequences to mapping.

### 4.3.4 Spatial Data Capture of Ecosystem Polygons

Air photo scale and quality complicated spatial data capture of ecosystem polygons. Aligning the scanned polygons from photos to digitized MS water features was complicated by inconsistencies in the MS maps, which were a consequence of the era of the mapping (1950’s). Table 2 itemizes specific issues with the MS base maps to the spatial data capture of ecosystem polygons and other mapping processes such as geo-rectification and mosaic building.

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**Table 2. Air Photo and MS Series Base Map Issues and Their Consequences to the Mapping Process**

| Mapsheet Number and Subunit | Air Photos                                                                                                                                                                                                   | MS Series Base map                                                                                                                           | Consequences                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                     | <ul style="list-style-type: none"><li>-photo years often different from base map year</li><li>-some wetlands were difficult to interpret from photos with no field sampling to help</li></ul>                | <ul style="list-style-type: none"><li>-base maps drawn based on different years and seasons</li></ul>                                        | <ul style="list-style-type: none"><li>-some transitional problems between map sheets</li><li>-rivers change over time and do not necessarily reflect what was on the photo</li><li>-wetland mapping reliability may vary</li></ul>                                                                                                                     |
| 10 Kootenay Canal           | <ul style="list-style-type: none"><li>-no problems</li></ul>                                                                                                                                                 | <ul style="list-style-type: none"><li>-only partial legacy base map available</li><li>-present TRIM used to obtain base and buffer</li></ul> | <ul style="list-style-type: none"><li>-no problem because present river level is the same as before canal construction</li></ul>                                                                                                                                                                                                                       |
| 12 Duncan Lake              | <ul style="list-style-type: none"><li>-mixed scale photo coverage</li><li>-different photo years in coverage</li><li>-some coverage in spring before trees were flushed</li></ul>                            | <ul style="list-style-type: none"><li>-river on photos differed from base map</li></ul>                                                      | <ul style="list-style-type: none"><li>-more difficult to interpret details of ecosystems from smaller scale photos</li><li>-structural stages differ between photos and don't give consistent seasonal interpretations</li><li>-when trees are not flushed, on early spring photos, the deciduous stands are much more difficult to pick out</li></ul> |
| 13 Pend d'Oreille           | <ul style="list-style-type: none"><li>-river level different from base map</li></ul>                                                                                                                         |                                                                                                                                              | <ul style="list-style-type: none"><li>-more rock showing within river on photos than indicated on MS series maps</li></ul>                                                                                                                                                                                                                             |
| 15 Arrow Lakes              | <ul style="list-style-type: none"><li>-lake level different from base map</li><li>-some seasonal flooding in photos; many islands and shoreline are under water</li><li>-mixed year photo coverage</li></ul> |                                                                                                                                              | <ul style="list-style-type: none"><li>-flooded lowland and gravel bars are difficult to interpret because they are flooded on photo, but are indicated on the MS maps</li><li>-structural stages differ on photos and don't give consistent seasonal interpretations</li></ul>                                                                         |
| 16 Arrow Lakes              | <ul style="list-style-type: none"><li>-lake level different from base map</li><li>-some seasonal flooding in photos; many islands and shoreline are under water</li><li>-mixed year photo coverage</li></ul> | <ul style="list-style-type: none"><li>-collecting of control points difficult for some sections</li></ul>                                    | <ul style="list-style-type: none"><li>-flooded lowland and gravel bars are difficult to interpret when flooded on photo</li><li>-structural stages differ on photos and don't give consistent seasonal interpretations</li><li>-some polygons may be slightly out spacially due to control point difficulties</li></ul>                                |

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| Mapsheet Number and Subunit     | Air Photos                                                                                                                                                                                         | MS Series Base map                                                                             | Consequences                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17<br>Arrow Lakes               | -lake level different from base map<br>-some seasonal flooding in photos; many islands and shoreline are under water<br>-some reservoir clearing in photos                                         |                                                                                                | -flooded lowland and gravel bars are difficult to interpret when flooded on photo<br>-structural stages differ on photos and don't give consistent seasonal interpretations<br>-clearing for reservoir does not accurately reflect pre-project structural stage                                                                                |
| 17<br>Whatshan Lake             | no problems                                                                                                                                                                                        | -base map at post flooding level<br>-photo mosaic used to obtain pre-flooding lake level shape | -does not fit onto legacy base map                                                                                                                                                                                                                                                                                                             |
| 18<br>Arrow Lakes               | -lake level different from base map<br>-some seasonal flooding in photos; many islands and shoreline are under water<br>-mixed year and scale photo coverage<br>-some reservoir clearing in photos |                                                                                                | -flooded lowland and gravel bars are difficult to interpret when flooded on photo<br>-structural stages differ on photos and don't give consistent seasonal interpretations<br>-more difficult to interpret details of ecosystems from larger scale photos<br>-clearing for reservoir does not accurately reflect pre-project structural stage |
| 19<br>Arrow Lakes               | -lake level different from base map<br>-some seasonal flooding in photos; many islands and shoreline are under water<br>-mixed year and scale photo coverage                                       |                                                                                                | -flooded lowland and gravel bars are difficult to interpret when flooded on photo<br>-more difficult to interpret details of ecosystems from larger scale photos<br>-structural stages differ on photos and don't give consistent seasonal interpretations                                                                                     |
| 20<br>Galena Bay<br>Arrow Lakes | -lake/river level different from base map<br>-some seasonal flooding in photos; many islands and shoreline are under water<br>-mixed year photo coverage                                           |                                                                                                | -flooded lowland and gravel bars are difficult to interpret when flooded on photo<br>-structural stages differ on photos and don't give consistent seasonal interpretations                                                                                                                                                                    |

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| Mapsheet Number and Subunit          | Air Photos                                                                                                                                                                                         | MS Series Base map                                                   | Consequences                                                                                                                                                                                                                                              |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 21<br>Beaton-<br>Arrow Lakes         | -lake/river level different from base map<br>-some seasonal flooding in photos; many islands and shoreline are under water<br>-mixed year photo coverage<br>-some photo distortion on steep slopes |                                                                      | -flooded lowland and gravel bars are difficult to interpret when flooded on photo<br>-structural stages differ on photos and don't give consistent seasonal interpretations<br>-some polygons may be distorted on map                                     |
| 22<br>Columbia R south of Revelstoke | -river level different from base map<br>-some seasonal flooding in photos; many islands and shoreline are under water<br>-mixed year photo coverage                                                | -different mapping technique was used to draw river high water level | -flooded lowland and gravel bars are difficult to interpret when flooded on photo<br>-structural stages differ on photos and don't give consistent seasonal interpretations<br>-low water gravel bars are designated as above high water on this mapsheet |
| 23<br>Pend d'Oreille                 | river level different from base map                                                                                                                                                                |                                                                      | -more rock showing along river on photos than typed in polygons                                                                                                                                                                                           |
| 24<br>Columbia R at Revelstoke       | -river level different from base map<br>-some seasonal flooding in photos; many islands and shoreline are under water                                                                              | -base map river boundary drawn differently                           | -flooded lowland and gravel bars are difficult to interpret when flooded on photo<br>-structural stages differ on photos and don't give consistent seasonal interpretations<br>-low water gravel bars are designated as above high water on this mapsheet |
| 25<br>Columbia River south of Mica   | -photo coverage in spring before trees were flushed                                                                                                                                                |                                                                      | -when trees are not flushed, the deciduous stands are much more difficult to pick out                                                                                                                                                                     |
| 26<br>Columbia River south of Mica   | -photo coverage in spring before trees were flushed<br>-some cloud and over exposure in photos                                                                                                     |                                                                      | -when trees are not flushed, the deciduous stands are much more difficult to pick out<br>-fewer details about ecosystem can be seen                                                                                                                       |
| 27<br>Columbia River south of Mica   | -photo coverage in spring before trees were flushed<br>-some cloud and over exposure in photos                                                                                                     |                                                                      | -when trees are not flushed, the deciduous stands are much more difficult to pick out<br>-fewer details about ecosystem can be seen                                                                                                                       |

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| Mapsheet Number and Subunit          | Air Photos                                                                    | MS Series Base map | Consequences                                                                                                                                                             |
|--------------------------------------|-------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 28<br>Columbia River south of Mica   | -photo coverage in spring before trees were flushed                           |                    | -when trees are not flushed, the deciduous stands are much more difficult to pick out                                                                                    |
| 29<br>Columbia River south of Mica   | -photo coverage in spring before trees were flushed                           |                    | -when trees are not flushed, the deciduous stands are much more difficult to pick out                                                                                    |
| 30<br>Columbia River south of Mica   | -river level different from base map<br>-mixed year photo coverage            |                    | -channels and vegetation may be slightly different from those in base map year<br>-structural stages differ on photos and don't give consistent seasonal interpretations |
| 31<br>Columbia River at Mica         | -river level different from base map                                          |                    | -channels and vegetation may be slightly different from those in base map year                                                                                           |
| 32<br>Columbia/ Wood River           | no problems                                                                   |                    |                                                                                                                                                                          |
| 33<br>Columbia River                 | no problems                                                                   |                    |                                                                                                                                                                          |
| 34<br>Columbia River/ Kinbasket Lake | no problems                                                                   |                    |                                                                                                                                                                          |
| 35<br>Columbia and Bush Rivers       | no problems                                                                   |                    |                                                                                                                                                                          |
| 36<br>Bush River                     | no problems                                                                   |                    |                                                                                                                                                                          |
| 37<br>Columbia River                 | no problems                                                                   |                    |                                                                                                                                                                          |
| 38<br>Columbia River                 | no problems                                                                   |                    |                                                                                                                                                                          |
| 39<br>Columbia River                 | no problems                                                                   |                    |                                                                                                                                                                          |
| 40<br>Columbia River                 | no problems                                                                   |                    |                                                                                                                                                                          |
| 44<br>Spillamacheen River            | -coverage is at edge of photos with much distortion                           |                    | -polygons may be slightly distorted<br>-ecosystem interpretation was more difficult                                                                                      |
| 50<br>Koocanusa                      | -river has changed course from base map<br>-some distortion at edge of photos |                    | -channels and vegetation may be slightly different from those in base map year<br>-some polygons may be slightly distorted                                               |

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| Mapsheet Number and Subunit | Air Photos                                                                                                                                                                                 | MS Series Base map                     | Consequences                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 51<br>Koocanusa             | -river has changed course from base map<br>-some distortion at edge of photos                                                                                                              |                                        | -channels and vegetation may be slightly different from those in base map year<br>-some polygons may be slightly distorted                                                                                                                                                                                                                                  |
| 52<br>Koocanusa             | -river has changed course from base map<br>-some distortion at edge of photos                                                                                                              |                                        | -channels and vegetation may be slightly different from those in base map year<br>-some polygons may be slightly distorted                                                                                                                                                                                                                                  |
| 53<br>Koocanusa             | -river has changed course from base map<br>-some distortion at edge of photos                                                                                                              |                                        | -channels and vegetation may be slightly different from those in base map year<br>-some polygons may be slightly distorted                                                                                                                                                                                                                                  |
| 66<br>Duncan River          | -mixed scale photo coverage<br>-different photo years in coverage<br>-some coverage in spring before trees were flushed<br>-some photos overexposed<br>-some photos were only laser copies | river on photos differed from base map | -more difficult to interpret details of ecosystems from larger scale photos<br>-structural stages differ on photos and don't give consistent seasonal interpretations<br>-when trees are not flushed, the deciduous stands are much more difficult to pick out<br>-fewer details about ecosystem can be seen with photo overexposure and using laser copies |
| 75<br>Canoe River           | no problems                                                                                                                                                                                |                                        |                                                                                                                                                                                                                                                                                                                                                             |
| 76<br>Canoe River           | no problems                                                                                                                                                                                |                                        |                                                                                                                                                                                                                                                                                                                                                             |
| 77<br>Canoe River           | -some reservoir clearing in photos                                                                                                                                                         |                                        | -clearing for reservoir does not accurately reflect pre-project structural stage                                                                                                                                                                                                                                                                            |
| 78<br>Canoe River           | -some reservoir clearing in photos                                                                                                                                                         |                                        | -clearing for reservoir does not accurately reflect pre-project structural stage                                                                                                                                                                                                                                                                            |
| 79<br>Canoe River           | -some reservoir clearing in photos                                                                                                                                                         |                                        | -clearing for reservoir does not accurately reflect pre-project structural stage                                                                                                                                                                                                                                                                            |

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### 5.0 Deliverables

1. Regular meetings with CBFWCP and MWLAP personnel prior to and during duration of contract to insure materials being submitted are appropriate for future interpretive needs, as well as clarification of any technical issues that may arise.
2. Georectified TIFF images of MS series mapping and mosaics (delivered via DVD to client).
3. Reach Break and Ecosystem Mapping digital deliverables (delivered via FTP to client).
4. MS series water feature digital deliverables (delivered via FTP to client).
5. Final report and expanded legend (four hard copies plus digital copy in .pdf format).

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## **APPENDIX 1**

### **Expanded Legend and Ecosystem Unit Descriptions**

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| ICHmm/06 DH CwSxw – Devil's club - Horsetail _____     | 17        |
| ICHmm/01 HM HwCw - Spruce - step moss _____            | 18        |
| ICHmm/04 HO CwHw – Oak fern _____                      | 19        |
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| ICHmm/08 RC CwSxw – Skunk cabbage - Sphagnum _____     | 21        |
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| ICHmw2/01 HF HwCw - Falsebox - Feathermoss                       | 31 |
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| ICHmw2/02 RC Rhacomitrium - Cladonia                             | 33 |
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| ICHwk1/08 RC CwSxw – Skunk cabbage                        | 55 |
| ICHwk1/05 RD CwHw – Devil's club – Lady fern              | 56 |
| ICHwk1/06 RH CwSxw – Devil's club - Horsetail             | 57 |
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| IDFdm2/04 SP FdLw - Spruce - Pinegrass                    | 69 |
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|                       |    |
|-----------------------|----|
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| PD Pond               | 91 |
| RE Reservoir          | 92 |
| RI River              | 92 |
| RO Rock Outcrop       | 92 |
| TA Talus              | 93 |
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## **BEC Subzone and Variant Descriptions**

1) **ICHdw1** The West Kootenay Dry Warm Interior Cedar - Hemlock Variant generally occurs between 450 and 1200 meters in elevation on warm aspects (135° to 285°) and between 450 and 1150m in elevation on cool aspects (286° to 134°) (Braumandl and Curran, 1992). It occurs along the Lower Arrow Lake, Whatshan Lake, Kootenay Canal Project, and the Pend d'Oreille River. This subzone is characterized by very hot, moist summers and very mild winters with light snowfall (Braumandl and Curran, 1992). Zonal sites commonly support mixed seral stands composed of western redcedar, hemlock, Douglas-fir, paper birch, western larch and white pine (Braumandl and Curran, 1992). The climax zonal stand consists of western redcedar and western hemlock. Common species in the understory include falsebox, black huckleberry, prince's pine and queen's cup. (Braumandl and Curran, 1992). This subzone supports a wide variety of wildlife species dependent on seral stands and is an especially important winter range for mule deer, white-tailed deer and elk.

2) **ICHmm** The Moist Mild Interior Cedar - Hemlock Variant occurs between the valley floor and 1250 m elevation in the Canoe River Valley. Climax stands are dominated by western redcedar and western hemlock with minor amounts of hybrid white spruce and subalpine fir. Seral stands are composed mostly of Douglas-fir, lodgepole pine and trembling aspen. Cottonwood is uncommon (DeLong and Fahlman, 1996).

3) **ICHmw1** The Golden Moist Warm Interior Cedar - Hemlock Variant occurs from valley bottom to 1550 m upstream from the Mica Dam in the Cummins, Wood, Bush and Columbia Valleys. While there is no climate data, the ICHmw1 is likely drier and warmer than the ICHwk1. Climax zonal forests are dominated by western hemlock and western redcedar. Seral stands commonly have Douglas-fir, western white pine, subalpine fir and hybrid spruce as well as western redcedar and western hemlock. Valley bottom sites are important winter range for moose and elk. Snags are important to cavity-nesting birds (Braumandl and Curran, 1992).

4) **ICHmw2** The Columbia – Shuswap Moist Warm Interior Cedar - Hemlock Variant occurs from valley bottom to 1500 m on warm aspects and 1450m on cool aspects (Braumandl and Curran, 1992) along Whatshan, Upper Arrow Lakes and in the Duncan Valley. This subzone is differentiated by hot and moist summers and very mild winters with light snowfall. The zonal sites commonly support mixed seral stands composed of Douglas-fir, western larch, hybrid white spruce, western redcedar, and western hemlock. Climax zonal stands consist of western redcedar and western hemlock. Common understory species include falsebox, black huckleberry, prince's pine, queen's cup, and

one-leaved foamflower. There has been sporadic logging and wildfire disturbance within this subzone, which has created a mosaic of varied-aged stands. This subzone supports a wide variety of wildlife species dependent on seral stands including bear, mule deer, white-tailed deer, moose and elk (Braumandl and Curran, 1992).

5) **ICHmw3** The Thompson Moist Warm Interior Cedar - Hemlock Variant occurs from the valley floor to 1400 m along the Columbia River south of Mica to Shelter Bay on the Upper Arrow Lake. It is moister and cooler than the ICHmw2. Climax zonal sites support dense stands of western redcedar and western hemlock while seral stands have Douglas-fir, lodgepole pine and paper birch. The dense forest canopy results in sparse shrub and herb layers (Lloyd et al, 1990).

6) **ICHvk1** The Mica Wet Cool Interior Cedar - Hemlock Variant occurs from valley bottom to 1250 m in the Big Bend area of the Columbia River and in portions of the Wood and Canoe Valleys. Climax zonal sites support dense stands of western redcedar and western hemlock while seral stands commonly have hybrid white spruce. High cover of devil's club is common. Oak fern, lady fern, spiny wood fern and one-leaved foamflower are dominant herbs. Extensive old-growth forests support a range of old-growth dependent species. Winter range is severely constrained by very deep winter snow (Braumandl and Curran, 1992).

7) **ICHwk1** The Wells Grey Wet Cool Interior Cedar - Hemlock Variant occurs from valley bottom to 1450 m along the Columbia Valley north of Revelstoke to the Bush River and around Beaton on the Arrow Lakes. The climate consists of warm wet summers and cool winters with moderate snowfall. Climax zonal forests are stands of western hemlock and western red-cedar, with hybrid spruce commonly found near the valley bottoms. Stands generally have poorly developed understory and a well developed moss layer. The extensive old-growth forest has historically supported an old-growth dependent community (Braumandl and Curran, 1992).

8) **ICHxw** The Very Dry Warm Interior Cedar - Hemlock Subzone occurs from valley bottom to 1100 m in the Pend d'Oreille Valley. It is characterized by very hot, dry summers and very mild winters with very light snowfall. Climax zonal sites are characterized by closed canopy stands of Douglas-fir and ponderosa pine and sporadic western redcedar, western hemlock and grand fir. Common snowberry, ocean spray, mock-orange, saskatoon, hazelnut, and baldhip rose are common shrubs. Fire and farm field abandonment has resulted in extensive shrub fields and mixed Fd/Py stands. The ICHxw is very important winter habitat for ungulates (Braumandl and Curran, 1992).

9) **IDFdm2** The Kootenay Dry, Mild Interior Douglas-fir Variant occurs from the valley floor to 1200 m in the Kootenay Valley south of Cranbrook. This variant is characterized by hot, very dry summers and cool winters with very light snowfall. Mature zonal sites support stands of Douglas-fir; however, due to frequent wildfires, mixed seral stands of Douglas-fir, western larch and lodgepole pine are more common. The understory is dominated by pinegrass and a high cover of shrubs such as birch-leaved spirea, common juniper, soopolallie, saskatoon, and common snowberry. This variant supports a wide variety of wildlife species dependent on open forests and is an especially important winter range for mule deer, white-tailed deer and elk (Braumandl and Curran, 1992).

10) **IDFun** The Undifferentiated Interior Douglas-fir (Arrow Lake) Unit occurs from lake level to 1000 m along the east shore of Lower Arrow Lake from Syringa Creek to Broadwater. Dry rocky sites with open mature climax stands of ponderosa pine and Douglas-fir are common. The understory consists of ocean spray, mock-orange, mallow ninebark and bluebunch wheatgrass (Braumandl and Curran, 1992). This unit is very important for ungulates which rely on it for winter range.

11) **PPdh2** The Kootenay Dry Hot Ponderosa Pine Variant occurs from the valley floor to 950 m in the Kootenay Valley south of Baynes Lake to the USA border. This variant is characterized by very hot, dry summers and mild winters with very light snowfall. Mature zonal sites have open stands of Douglas-fir and ponderosa pine. The understory is dominated by bluebunch wheatgrass with few shrubs. This variant supports a wide variety of wildlife species dependent on grasslands and open forests. It is an especially important winter range for mule deer, white-tailed deer and elk and provides habitat for the locally rare sharp-tailed grouse and badger (Braumandl and Curran, 1992).

12) **SBSdh1** The Dry Hot Sub-Boreal Spruce Subzone occurs from the valley floor to 1225 m in the upper Canoe Valley. This subzone is within the rainshadow of the Premier Range and has an extensive fire history. Zonal sites are dominated by seral to mature stands of Douglas-fir and lodgepole pine. Climax stands are rare and consist of hybrid white spruce, subalpine fir and possibly Douglas-fir. Trembling aspen is present in seral stands, while paper birch and cottonwood may also be present (DeLong and Fahlman, 1996).

### **BEC/Site series # Line Changes**

Current (2004) provincial BEC/Site series # lines were used to designate polygons into the correct subzones or variants. However, where these lines bisect a current reservoir, the BEC/Site series # line was moved to the centre of the historic river or lake. In some cases

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the BEC/Site series # line was moved slightly from positions drawn in the standard 1:250,000 scale format to reflect more logical local terrain breaks.

### Structural Stages

- 1** - Non-Vegetated/Sparsely Vegetated (< 20 yrs)
- 2** - Grass-Forb (< 20 yrs)
- 3** - Shrub/Herb (< 20 yrs)
- 3a** - Low Shrub (< 20 yrs)
- 3b** - Tall Shrub (< 20 yrs)
- 4** - Pole/Sapling (20-40 yrs)
- 5** - Young Forest (40-80 yrs)
- 6** - Mature Forest (80-250yrs) (80-140 yrs in ICHdw1, ICHmw3, SBSdh1)
- 7** - Old Forest, (>250 yrs) (> 140 yrs in ICHdw1, ICHmw3, SBSdh1)

(Note: Age applies only to units succeeding to trees )

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### ECOSYSTEM UNITS

#### ICHdw1/02 DO FdPy - Oregon-grape - Parsley fern

| Map Unit                                                                                                                                                                                                                                                                                               | BEC/Site series # | Description                               | CB Code     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------|-------------|
| <b>DO</b>                                                                                                                                                                                                                                                                                              | <b>ICHdw1/02</b>  | <b>FdPy - Oregon-grape - Parsley fern</b> | <b>5,98</b> |
| DO typically occurs on deep medium textured morainal, colluvial and glaciofluvial parent materials with warm aspects. These sites generally have thin (<2 cm.) moder humus forms and subxeric soil moisture regimes. Early seral vegetation is similar to the 'DN' ecosystem unit mapped in the ICHxw. |                   |                                           |             |

| Map Symbol    | DO2                                                                                       | DO3a                                                                                                                                         | DO3b                                                                                                                  | DO4                                                                                                                        | DO5                                                                                                                             | DO6                                                                                                        | DO7                                                                                                        |
|---------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                | Low shrub                                                                                                                                    | Tall shrub                                                                                                            | Pole sapling                                                                                                               | Young forest                                                                                                                    | Mature forest                                                                                              | Old forest                                                                                                 |
| Dominants     | open sites of:<br>fireweed<br>bracken<br>pinegrass                                        | shrubby sites of:<br>saskatoon<br>tall Oregon-grape<br>mallow ninebark<br>snowbrush<br>pinegrass                                             | shrubby sites of:<br>Douglas-fir<br>paper birch<br>saskatoon<br>tall Oregon-grape<br>mallow ninebark<br>snowbrush     | open young stands of:<br>Douglas-fir<br>paper birch<br>ponderosa pine<br>tall Oregon-grape<br>mallow ninebark<br>snowbrush | open stands of:<br>Douglas-fir<br>ponderosa pine<br>tall Oregon-grape<br>mallow ninebark<br>snowbrush                           | open stands of:<br>Douglas-fir<br>ponderosa pine<br>tall Oregon-grape<br>mallow ninebark                   | open stands of:<br>Douglas-fir<br>ponderosa pine<br>tall Oregon-grape<br>mallow ninebark                   |
| Associates    | white-flowered<br>hawkweed<br>Bluebunch<br>wheatgrass                                     | Douglas-fir<br>ponderosa pine<br>trembling aspen<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>stiff needlegrass | ponderosa pine<br>trembling aspen<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>pinegrass | saskatoon<br>trembling aspen<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>pinegrass           | paper birch<br>trembling aspen<br>saskatoon<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>pinegrass | saskatoon<br>snowbrush<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>pinegrass | saskatoon<br>snowbrush<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>pinegrass |
| Comments      | Vegetation derived from plot data and the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                                              |                                                                                                                       |                                                                                                                            |                                                                                                                                 |                                                                                                            |                                                                                                            |

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### ICHdw1/03 HD CwHw – White pine – Devil's club

| Map Unit                                                                                                                                | BEC/Site series # | Description                             | CB Code  |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|----------|
| <b>HD</b>                                                                                                                               | <b>ICHdw1/03</b>  | <b>CwHw – White pine – Devil's club</b> | <b>5</b> |
| HD typically occurs on gentle, lower slopes that receive moisture. It has deep, medium textured soils with a subhygric moisture regime. |                   |                                         |          |

| Map Symbol    | HD2                                                                                       | HD3a                                                                                                                      | HD3b                                                                                                          | HD4                                                                                                           | HD5                                                                                                           | HD6                                                                                                           | HD7                                                                                                           |
|---------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                | Low shrub                                                                                                                 | Tall shrub                                                                                                    | Pole sapling                                                                                                  | Young forest                                                                                                  | Mature forest                                                                                                 | Old forest                                                                                                    |
| Dominants     | fireweed<br>devil's club<br>queen's cup<br>one-leaved<br>foamflower                       | western redcedar<br>western hemlock<br>Douglas-fir<br>devil's club<br>fireweed<br>queen's cup<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>Douglas-fir<br>devil's club<br>queen's cup<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>Douglas-fir<br>devil's club<br>queen's cup<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>Douglas-fir<br>devil's club<br>queen's cup<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>Douglas-fir<br>devil's club<br>queen's cup<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>Douglas-fir<br>devil's club<br>queen's cup<br>one-leaved<br>foamflower |
| Associates    | wild sarsaparilla<br>oak fern                                                             | black cottonwood<br>western yew<br>wild sarsaparilla<br>oak fern                                                          | black cottonwood<br>hybrid white spruce<br>western yew<br>wild sarsaparilla<br>oak fern                       | black cottonwood<br>hybrid white spruce<br>western yew<br>wild sarsaparilla<br>oak fern                       | black cottonwood<br>hybrid white spruce<br>western yew<br>wild sarsaparilla<br>oak fern                       | black cottonwood<br>hybrid white spruce<br>western yew<br>wild sarsaparilla<br>oak fern                       | black cottonwood<br>hybrid white spruce<br>western yew<br>wild sarsaparilla<br>oak fern                       |
| Comments      | Vegetation derived from plot data and the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                           |                                                                                                               |                                                                                                               |                                                                                                               |                                                                                                               |                                                                                                               |

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### ICHdw1/04 RD CwHw - White pine - Devil's club

| Map Unit                                                                      | BEC/Site series # | Description                             | CB Code      |
|-------------------------------------------------------------------------------|-------------------|-----------------------------------------|--------------|
| <b>RD</b>                                                                     | <b>ICHdw1/04</b>  | <b>CwHw - White pine - Devil's club</b> | <b>5, 24</b> |
| RD typically occurs on level receiving sites with deep medium-textured soils. |                   |                                         |              |

| Map Symbol    | RD2                                                                                       | RD3a                                                                                                                  | RD3b                                                                                                                                                                         | RD4                                                                                                                                                                                             | RD5                                                                                                                                                                                    | RD6                                                                                                                                                              | RD7                                                                                                                                                              |
|---------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                | Low shrub                                                                                                             | Tall Shrub                                                                                                                                                                   | Pole sapling                                                                                                                                                                                    | Young forest                                                                                                                                                                           | Mature forest                                                                                                                                                    | Old forest                                                                                                                                                       |
| Dominants     | open sites of:<br>lady fern<br>blue wildrye                                               | shrubby sites of:<br>Douglas maple<br>western hemlock<br>one-leaved<br>foamflower<br>lady fern                        | shrubby sites of:<br>Douglas maple<br>western hemlock<br>one-leaved<br>foamflower<br>lady fern                                                                               | dense stands of:<br>western hemlock<br>one-leaved<br>foamflower<br>paper birch<br>lady fern                                                                                                     | closed stands of:<br>western hemlock<br>one-leaved<br>foamflower<br>lady fern<br>electrified cat's tail<br>moss                                                                        | closed stands of:<br>western redcedar<br>western hemlock<br>one-leaved<br>foamflower<br>electrified cat's tail<br>moss                                           | closed stands of:<br>western redcedar<br>western hemlock<br>one-leaved<br>foamflower<br>electrified cat's tail<br>moss                                           |
| Associates    | western hemlock<br>willow<br>oak fern                                                     | paper birch<br>western white pine<br>willow<br>devil's club<br>oak fern<br>blue wildrye<br>red-stemmed<br>feathermoss | paper birch<br>western redcedar<br>black cottonwood<br>western white pine<br>willow<br>devil's club<br>oak fern<br>wild ginger<br>blue wildrye<br>red-stemmed<br>feathermoss | western redcedar<br>western white pine<br>black cottonwood<br>willow<br>devil's club<br>oak fern<br>wild ginger<br>blue wildrye<br>red-stemmed<br>feathermoss<br>electrified cat's tail<br>moss | western redcedar<br>paper birch<br>black cottonwood<br>western white pine<br>devil's club<br>oak fern<br>wild ginger<br>blue wildrye<br>red-stemmed<br>feathermoss<br>pipecleaner moss | black cottonwood<br>western white pine<br>devil's club<br>oak fern<br>lady fern<br>wild ginger<br>blue wildrye<br>red-stemmed<br>feathermoss<br>pipecleaner moss | black cottonwood<br>western white pine<br>devil's club<br>oak fern<br>lady fern<br>wild ginger<br>blue wildrye<br>red-stemmed<br>feathermoss<br>pipecleaner moss |
| Comments      | Vegetation derived from plot data and the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                       |                                                                                                                                                                              |                                                                                                                                                                                                 |                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                                                  |

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### ICHdw1/01a RFa CwFd - Falsebox

| Map Unit                                                                         | BEC/Site series # | Description            | CB Code  |
|----------------------------------------------------------------------------------|-------------------|------------------------|----------|
| <b>RFa</b>                                                                       | <b>ICHdw1/01a</b> | <b>CwFd - Falsebox</b> | <b>5</b> |
| RFa typically occurs on gentle to moderately sloping deep medium-textured soils. |                   |                        |          |

| Map Symbol    | RFa2                                                                                      | RFa3a                                                                                                     | RFa3b                                                                                                               | RFa4                                                                                                                                       | RFa5                                                                                                                                       | RFa6                                                                                                                                       | RFa7                                                                                                 |
|---------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                | Low shrub                                                                                                 | Tall Shrub                                                                                                          | Pole sapling                                                                                                                               | Young forest                                                                                                                               | Mature forest                                                                                                                              | Old forest                                                                                           |
| Dominants     | open sites of:<br>fireweed                                                                | shrubby sites of:<br>lodgepole pine<br>paper birch<br>Douglas maple                                       | shrubby sites of:<br>lodgepole pine<br>paper birch<br>Douglas maple                                                 | dense stands of:<br>lodgepole pine<br>paper birch<br>Douglas maple                                                                         | closed stands of:<br>lodgepole pine<br>paper birch<br>Douglas maple                                                                        | closed stands of:<br>Douglas-fir<br>western redcedar<br>paper birch                                                                        | closed stands of:<br>Douglas-fir<br>western redcedar                                                 |
| Associates    | paper birch<br>clasping<br>twistedstalk<br>wild sarsaparilla<br>pathfinder                | Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping<br>twistedstalk<br>wild sarsaparilla<br>fireweed | Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping<br>twistedstalk<br>wild sarsaparilla<br>fireweed<br>mosses | Douglas-fir<br>western redcedar<br>Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping<br>twistedstalk<br>wild sarsaparilla<br>mosses | Douglas-fir<br>western redcedar<br>Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping<br>twistedstalk<br>wild sarsaparilla<br>mosses | lodgepole pine<br>Douglas maple<br>Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping<br>twistedstalk<br>wild sarsaparilla<br>mosses | Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping twistedstalk<br>wild sarsaparilla<br>mosses |
| Comments      | Vegetation derived from plot data and the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                           |                                                                                                                     |                                                                                                                                            |                                                                                                                                            |                                                                                                                                            |                                                                                                      |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHdw1/01b RFb CwFd - Falsebox

| Map Unit                                                                                                                    | BEC/Site series # | Description            | CB Code  |
|-----------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|----------|
| <b>RFb</b>                                                                                                                  | <b>ICHdw1/01b</b> | <b>CwFd - Falsebox</b> | <b>5</b> |
| RFb typically occurs on gentle to moderately sloping deep medium-textured soils.                                            |                   |                        |          |
| Mor humus forms occur frequently with an average thickness of 2 cm. Soil moisture regimes are generally mesic to subhygric. |                   |                        |          |

| Map Symbol    | RFb2                                                                                      | RFb3a                                                                                                                   | RbF3b                                                                                                                             | RFb4                                                                                                                                                     | RFb5                                                                                                                                                     | RFb6                                                                                                                                                     | RFb7                                                                                                               |
|---------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                | Low shrub                                                                                                               | Tall Shrub                                                                                                                        | Pole sapling                                                                                                                                             | Young forest                                                                                                                                             | Mature forest                                                                                                                                            | Old forest                                                                                                         |
| Dominants     | open sites of:<br>fireweed                                                                | shrubby sites of:<br>lodgepole pine<br>paper birch<br>Douglas maple                                                     | shrubby sites of:<br>lodgepole pine<br>paper birch<br>Douglas maple                                                               | dense stands of:<br>lodgepole pine<br>paper birch<br>Douglas maple                                                                                       | closed stands of:<br>lodgepole pine<br>paper birch<br>Douglas maple                                                                                      | closed stands of:<br>Douglas-fir<br>western redcedar<br>paper birch                                                                                      | closed stands of:<br>Douglas-fir<br>western redcedar                                                               |
| Associates    | paper birch<br>clasping<br>twistedstalk<br>wild sarsaparilla<br>pathfinder                | Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping<br>twistedstalk<br>pathfinder<br>wild sarsaparilla<br>fireweed | Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping<br>twistedstalk<br>pathfinder<br>wild sarsaparilla<br>fireweed<br>mosses | Douglas-fir<br>western redcedar<br>Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping<br>twistedstalk<br>pathfinder<br>wild sarsaparilla<br>mosses | Douglas-fir<br>western redcedar<br>Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping<br>twistedstalk<br>pathfinder<br>wild sarsaparilla<br>mosses | lodgepole pine<br>Douglas maple<br>Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping<br>twistedstalk<br>pathfinder<br>wild sarsaparilla<br>mosses | Utah honeysuckle<br>baldhip rose<br>falsebox<br>clasping twistedstalk<br>pathfinder<br>wild sarsaparilla<br>mosses |
| Comments      | Vegetation derived from plot data and the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                         |                                                                                                                                   |                                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                          |                                                                                                                    |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmm/07 BS SbPI – Bog-laurel - Sphagnum

| Map Unit                                                                                                                         | BEC/Site series # | Description                         | CB Code   |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------|-----------|
| <b>BS</b>                                                                                                                        | <b>ICHmm/07</b>   | <b>SbPI – Bog-laurel - Sphagnum</b> | <b>24</b> |
| BS typically occurs on depressional sites with deep, medium-textured soils or organic materials and a subhydric moisture regime. |                   |                                     |           |

| Map Symbol    | BS2                                                                                                                                                                                                                       | BS3a                                                                    | BS3b                                                                    | BS4                                                                     | BS5                                                                     | BS6                                                                     | BS7                                                                     |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                               | Tall shrub                                                              | Pole sapling                                                            | Young forest                                                            | Mature forest                                                           | Old forest                                                              |
| Dominants     | velvet-leaved<br>blueberry<br>bunchberry<br>sedges<br>sphagnum                                                                                                                                                            | black spruce<br>Labrador tea<br>bunchberry<br>sedges<br>sphagnum        | black spruce<br>Labrador tea<br>bunchberry<br>sedges<br>sphagnum        | black spruce<br>Labrador tea<br>bunchberry<br>sedges<br>sphagnum        | black spruce<br>Labrador tea<br>bunchberry<br>sedges<br>sphagnum        | black spruce<br>Labrador tea<br>bunchberry<br>sedges<br>sphagnum        | black spruce<br>Labrador tea<br>bunchberry<br>sedges<br>sphagnum        |
| Associates    | bog-laurel<br>glow moss                                                                                                                                                                                                   | lodgepole pine<br>velvet-leaved<br>blueberry<br>bog-laurel<br>glow moss | lodgepole pine<br>velvet-leaved<br>blueberry<br>bog-laurel<br>glow moss | lodgepole pine<br>velvet-leaved<br>blueberry<br>bog-laurel<br>glow moss | lodgepole pine<br>velvet-leaved<br>blueberry<br>bog-laurel<br>glow moss | lodgepole pine<br>velvet-leaved<br>blueberry<br>bog-laurel<br>glow moss | lodgepole pine<br>velvet-leaved<br>blueberry<br>bog-laurel<br>glow moss |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (Delong and Fahlman 1996). |                                                                         |                                                                         |                                                                         |                                                                         |                                                                         |                                                                         |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmm/06 DH CwSxw – Devil's club - Horsetail

| Map Unit                                                                                                                       | BEC/Site series # | Description                             | CB Code      |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|--------------|
| <b>DH</b>                                                                                                                      | <b>ICHmm/06</b>   | <b>CwSxw – Devil's club - Horsetail</b> | <b>5, 24</b> |
| DH typically occurs on lower to toe slopes with deep, medium-textured soils. Seepage may be present; a hygric moisture regime. |                   |                                         |              |

| Map Symbol    | DH2                                                                                                                                                                                                                       | DH3a                                                                                                                  | DH3b                                                                                                             | DH4                                                                                                              | DH5                                                                                                              | DH6                                                                                                              | DH7                                                                                                              |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                                                                             | Tall shrub                                                                                                       | Pole sapling                                                                                                     | Young forest                                                                                                     | Mature forest                                                                                                    | Old forest                                                                                                       |
| Dominants     | thimbleberry<br>devil's club<br>bunchberry<br>fireweed<br>oak fern<br>common horsetail                                                                                                                                    | western redcedar<br>thimbleberry<br>devil's club<br>fireweed<br>bunchberry<br>oak fern<br>common horsetail            | western redcedar<br>devil's club<br>bunchberry<br>oak fern<br>common horsetail<br>electrified cat's tail<br>moss | western redcedar<br>devil's club<br>bunchberry<br>oak fern<br>common horsetail<br>electrified cat's tail<br>moss | western redcedar<br>devil's club<br>bunchberry<br>oak fern<br>common horsetail<br>electrified cat's-tail<br>moss | western redcedar<br>devil's club<br>bunchberry<br>oak fern<br>common horsetail<br>electrified cat's tail<br>moss | western redcedar<br>devil's club<br>bunchberry<br>oak fern<br>common horsetail<br>electrified cat's tail<br>moss |
| Associates    | queen's cup<br>electrified cat's-tail<br>moss<br>red-stemmed<br>feathermoss                                                                                                                                               | hybrid white spruce<br>western hemlock<br>queen's cup<br>red-stemmed<br>feathermoss<br>electrified cat's tail<br>moss | hybrid white spruce<br>western hemlock<br>thimbleberry<br>queen's cup<br>red-stemmed<br>feathermoss              | hybrid white spruce<br>western hemlock<br>thimbleberry<br>queen's cup<br>red-stemmed<br>feathermoss              | hybrid white spruce<br>western hemlock<br>thimbleberry<br>queen's cup<br>red-stemmed<br>feathermoss              | hybrid white spruce<br>western hemlock<br>thimbleberry<br>queen's cup<br>red-stemmed<br>feathermoss              | hybrid white spruce<br>western hemlock<br>thimbleberry<br>queen's cup<br>red-stemmed<br>feathermoss              |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (DeLong and Fahlman 1996). |                                                                                                                       |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmm/01 HM HwCw - Spruce - step moss

| Map Unit                                                                                                  | BEC/Site series # | Description                      | CB Code  |
|-----------------------------------------------------------------------------------------------------------|-------------------|----------------------------------|----------|
| <b>HM</b>                                                                                                 | <b>ICHmm/01</b>   | <b>HwCw - Spruce - step moss</b> | <b>5</b> |
| HM typically occurs on a gentle slope with deep, medium-textured soils with a mesic soil moisture regime. |                   |                                  |          |

| Map Symbol    | HM2                                                                                                                                                                                                                       | HM3a                                                                                                                           | HM3b                                                                                                                           | HM4                                                                                         | HM5                                                                                                           | HM6                                                                                                           | HM7                                                                                                           |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                                                                                      | Tall shrub                                                                                                                     | Pole sapling                                                                                | Young forest                                                                                                  | Mature forest                                                                                                 | Old forest                                                                                                    |
| Dominants     | dense herb cover of:<br>fireweed                                                                                                                                                                                          | dense shrub/herb cover of:<br>fireweed<br>thimbleberry<br>willow                                                               | dense shrub/herb cover of:<br>fireweed<br>thimbleberry<br>willow                                                               | dense forest of:<br>western redcedar<br>western hemlock                                     | dense forest of:<br>western redcedar<br>western hemlock<br>red-stemmed<br>feathermoss                         | dense forest of:<br>western redcedar<br>western hemlock<br>red-stemmed<br>feathermoss                         | dense forest of:<br>western redcedar<br>western hemlock<br>red-stemmed<br>feathermoss                         |
| Associates    | oak fern<br>bunchberry<br>one-leaved<br>foamflower                                                                                                                                                                        | western redcedar<br>western hemlock<br>false azalea<br>bunchberry<br>oak fern<br>black huckleberry<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>false azalea<br>bunchberry<br>oak fern<br>black huckleberry<br>one-leaved<br>foamflower | Douglas-fir<br>thimbleberry<br>false azalea<br>red-stemmed<br>feathermoss<br>knight's plume | hybrid spruce<br>subalpine fir<br>Douglas-fir<br>bunchberry<br>thimbleberry<br>false azalea<br>knight's plume | subalpine fir<br>hybrid spruce<br>Douglas-fir<br>bunchberry<br>thimbleberry<br>false azalea<br>knight's plume | subalpine fir<br>hybrid spruce<br>Douglas-fir<br>bunchberry<br>thimbleberry<br>false azalea<br>knight's plume |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (Delong and Fahlman 1996). |                                                                                                                                |                                                                                                                                |                                                                                             |                                                                                                               |                                                                                                               |                                                                                                               |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmm/04 HO CwHw – Oak fern

| Map Unit  | BEC/Site series # | Description            | CB Code  |
|-----------|-------------------|------------------------|----------|
| <b>HO</b> | <b>ICHmm/04</b>   | <b>CwHw – Oak fern</b> | <b>5</b> |

HO typically occurs on a gentle slope in a lower receiving site with deep, medium-textured soils and a mesic soil moisture regime.

| Map Symbol    | HO2                                                                                                                                                                                                                       | HO3a                                                                                                                         | HO3b                                                                                                          | HO4                                                                                                                                                    | HO5                                                                                                                                                    | HO6                                                                                                                                                    | HO7                                                                                                                                                    |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                                                                                    | Tall shrub                                                                                                    | Pole sapling                                                                                                                                           | Young forest                                                                                                                                           | Mature forest                                                                                                                                          | Old forest                                                                                                                                             |
| Dominants     | fireweed<br>oak fern<br>bunchberry<br>step moss                                                                                                                                                                           | thimbleberry<br>false azaea<br>black huckleberry<br>oak fern<br>bunchberry<br>step moss                                      | western hemlock<br>western redcedar<br>oak fern<br>bunchberry<br>step moss<br>red-stemmed<br>feathermoss      | western hemlock<br>western redcedar<br>oak fern<br>bunchberry<br>step moss<br>red-stemmed<br>feathermoss                                               | western hemlock<br>western redcedar<br>oak fern<br>bunchberry<br>step moss<br>red-stemmed<br>feathermoss                                               | western hemlock<br>western redcedar<br>oak fern<br>bunchberry<br>step moss<br>red-stemmed<br>feathermoss                                               | western hemlock<br>western redcedar<br>oak fern<br>bunchberry<br>step moss<br>red-stemmed<br>feathermoss                                               |
| Associates    | foamflowers<br>one-sided<br>wintergreen<br>knight's plume                                                                                                                                                                 | fireweed<br>western hemlock<br>western redcedar<br>devil's club<br>foamflowers<br>one-sided<br>wintergreen<br>knight's plume | false azaea<br>black huckleberry<br>devil's club<br>foamflowers<br>one-sided<br>wintergreen<br>knight's plume | hybrid white spruce<br>subalpine fir<br>false azalea<br>black huckleberry<br>devil's club<br>foamflowers<br>one-sided<br>wintergreen<br>knight's plume | hybrid white spruce<br>subalpine fir<br>false azalea<br>black huckleberry<br>devil's club<br>foamflowers<br>one-sided<br>wintergreen<br>knight's plume | hybrid white spruce<br>subalpine fir<br>false azalea<br>black huckleberry<br>devil's club<br>foamflowers<br>one-sided<br>wintergreen<br>knight's plume | hybrid white spruce<br>subalpine fir<br>false azalea<br>black huckleberry<br>devil's club<br>foamflowers<br>one-sided<br>wintergreen<br>knight's plume |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (DeLong and Fahlman 1996). |                                                                                                                              |                                                                                                               |                                                                                                                                                        |                                                                                                                                                        |                                                                                                                                                        |                                                                                                                                                        |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmm/03 HS HwCw – Step moss

| Map Unit                                                                                                                   | BEC/Site series # | Description             | CB Code  |
|----------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------|----------|
| <b>HS</b>                                                                                                                  | <b>ICHmm/03</b>   | <b>HwCw – Step moss</b> | <b>5</b> |
| HS typically occurs on gentle to steep slopes with deep, coarse-textured soils and a subxeric to submesic moisture regime. |                   |                         |          |

| Map Symbol    | HS2                                                                                                                                                                                                                       | HS3a                                                                                                       | HS3b                                                                                             | HS4                                                                                              | HS5                                                                                              | HS6                                                                                              | HS7                                                                                              |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                                                                  | Tall shrub                                                                                       | Pole sapling                                                                                     | Young forest                                                                                     | Mature forest                                                                                    | Old forest                                                                                       |
| Dominants     | fireweed<br>bunchberry<br>red-stemmed<br>feathermoss<br>step moss                                                                                                                                                         | thimbleberry<br>false azalea<br>black huckleberry<br>bunchberry<br>red-stemmed<br>feathermoss<br>step moss | western hemlock<br>western redcedar<br>red-stemmed<br>feathermoss<br>step moss<br>knight's plume | western hemlock<br>western redcedar<br>red-stemmed<br>feathermoss<br>step moss<br>knight's plume | western hemlock<br>western redcedar<br>red-stemmed<br>feathermoss<br>step moss<br>knight's plume | western hemlock<br>western redcedar<br>red-stemmed<br>feathermoss<br>step moss<br>knight's plume | western hemlock<br>western redcedar<br>red-stemmed<br>feathermoss<br>step moss<br>knight's plume |
| Associates    | prince's pine<br>knight's plume                                                                                                                                                                                           | western hemlock<br>western redcedar<br>prince's pine<br>knight's plume                                     | subalpine fir<br>Douglas-fir<br>false azalea<br>black huckleberry<br>bunchberry<br>prince's pine | subalpine fir<br>Douglas-fir<br>false azalea<br>black huckleberry<br>bunchberry<br>prince's pine | subalpine fir<br>Douglas-fir<br>false azalea<br>black huckleberry<br>bunchberry<br>prince's pine | subalpine fir<br>Douglas-fir<br>false azalea<br>black huckleberry<br>bunchberry<br>prince's pine | subalpine fir<br>Douglas-fir<br>false azalea<br>black huckleberry<br>bunchberry<br>prince's pine |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (Delong and Fahlman 1996). |                                                                                                            |                                                                                                  |                                                                                                  |                                                                                                  |                                                                                                  |                                                                                                  |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmm/08 RC CwSxw – Skunk cabbage - Sphagnum

| Map Unit                                                                                                    | BEC/Site series # | Description                             | CB Code   |
|-------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|-----------|
| <b>RC</b>                                                                                                   | <b>ICHmm/08</b>   | <b>CwSxw – Skunk cabbage - Sphagnum</b> | <b>24</b> |
| RC typically occurs on depressional sites with deep, medium-textured soils. Subhydric soil moisture regime. |                   |                                         |           |

| Map Symbol    | RC2                                                                                                                                                                                                                       | RC3a                                                                                                  | RC3b                                                                                                               | RC4                                                                                                                | RC5                                                                                                                | RC6                                                                                                                | RC7                                                                                                                |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                                                             | Tall shrub                                                                                                         | Pole sapling                                                                                                       | Young forest                                                                                                       | Mature forest                                                                                                      | Old forest                                                                                                         |
| Dominants     | skunk cabbage<br>sedges<br>red-stemmed<br>feathermoss<br>sphagnum                                                                                                                                                         | oval-leaved<br>huckleberry<br>skunk cabbage<br>sedges<br>red-stemmed<br>feathermoss<br>sphagnum       | western hemlock<br>oval-leaved<br>huckleberry<br>skunk cabbage<br>sedges<br>red-stemmed<br>feathermoss<br>sphagnum | western hemlock<br>oval-leaved<br>huckleberry<br>skunk cabbage<br>sedges<br>red-stemmed<br>feathermoss<br>sphagnum | western hemlock<br>oval-leaved<br>huckleberry<br>skunk cabbage<br>sedges<br>red-stemmed<br>feathermoss<br>sphagnum | western hemlock<br>oval-leaved<br>huckleberry<br>skunk cabbage<br>sedges<br>red-stemmed<br>feathermoss<br>sphagnum | western hemlock<br>oval-leaved<br>huckleberry<br>skunk cabbage<br>sedges<br>red-stemmed<br>feathermoss<br>sphagnum |
| Associates    | bunchberry<br>oak fern                                                                                                                                                                                                    | western hemlock<br>hybrid white spruce<br>false azalea<br>black huckleberry<br>bunchberry<br>oak fern | hybrid white spruce<br>false azalea<br>black huckleberry<br>bunchberry<br>oak fern                                 | hybrid white spruce<br>false azalea<br>black huckleberry<br>bunchberry<br>oak fern                                 | hybrid white spruce<br>false azalea<br>black huckleberry<br>bunchberry<br>oak fern                                 | hybrid white spruce<br>false azalea<br>black huckleberry<br>bunchberry<br>oak fern                                 | hybrid white spruce<br>false azalea<br>black huckleberry<br>bunchberry<br>oak fern                                 |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (Delong and Fahlman 1996). |                                                                                                       |                                                                                                                    |                                                                                                                    |                                                                                                                    |                                                                                                                    |                                                                                                                    |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmm/05 RD CwHw – Devil's club – Oak fern

| Map Unit                                                                                                                                                                              | BEC/Site series # | Description                           | CB Code  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|----------|
| <b>RD</b>                                                                                                                                                                             | <b>ICHmm/05</b>   | <b>CwHw – Devil's club – Oak fern</b> | <b>5</b> |
| RD typically occurs on a gentle, lower slopes that are receiving sites. It can be found on fluvial or morainal materials and has deep, medium-textured soils. Seepage may be present. |                   |                                       |          |

| Map Symbol    | RD2                                                                                                                                                                                                                        | RD3a                                                                                                               | RD3b                                                                                                              | RD4                                                                                                               | RD5                                                                                                               | RD6                                                                                                               | RD7                                                                                                               |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                 | Low shrub                                                                                                          | Tall shrub                                                                                                        | Pole sapling                                                                                                      | Young forest                                                                                                      | Mature forest                                                                                                     | Old forest                                                                                                        |
| Dominants     | fireweed<br>lady fern<br>oak fern<br>red-stemmed<br>feathermoss                                                                                                                                                            | western redcedar<br>western hemlock<br>devil's club<br>black gooseberry<br>lady fern<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>devil's club<br>black gooseberry<br>oak fern<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>devil's club<br>black gooseberry<br>oak fern<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>devil's club<br>black gooseberry<br>oak fern<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>devil's club<br>black gooseberry<br>oak fern<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>devil's club<br>black gooseberry<br>oak fern<br>red-stemmed<br>feathermoss |
| Associates    | bunchberry<br>false azalea<br>knight's plume                                                                                                                                                                               | bunchberry<br>thimbleberry<br>false azalea<br>knight's plume                                                       | bunchberry<br>thimbleberry<br>lady fern<br>false azalea<br>knight's plume                                         | hybrid spruce<br>subalpine fir<br>bunchberry<br>thimbleberry<br>lady fern<br>false azalea<br>knight's plume       | hybrid spruce<br>subalpine fir<br>bunchberry<br>thimbleberry<br>lady fern<br>false azalea<br>knight's plume       | hybrid spruce<br>subalpine fir<br>bunchberry<br>thimbleberry<br>lady fern<br>false azalea<br>knight's plume       | hybrid spruce<br>subalpine fir<br>bunchberry<br>thimbleberry<br>lady fern<br>false azalea<br>knight's plume       |
| Comments      | Vegetation derived from. Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al. 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (Delong and Fahman 1996). |                                                                                                                    |                                                                                                                   |                                                                                                                   |                                                                                                                   |                                                                                                                   |                                                                                                                   |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmm/02 RS CwSwx - Soopolallie

| Map Unit                                                                                                                      | BEC/Site series # | Description                | CB Code      |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|--------------|
| <b>RS</b>                                                                                                                     | <b>ICHmm/02</b>   | <b>CwSwx - Soopolallie</b> | <b>5, 98</b> |
| RS typically occurs on significant, warm aspect slopes with deep, coarse-textured soils. Xeric to very xeric moisture regime. |                   |                            |              |

| Map Symbol    | RS2                                                                                                                                                                                                                       | RS3a                                                                | RS3b                                                                                           | RS4                                                                                            | RS5                                                                                            | RS6                                                                                            | RS7                                                                                            |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                           | Tall shrub                                                                                     | Pole sapling                                                                                   | Young forest                                                                                   | Mature forest                                                                                  | Old forest                                                                                     |
| Dominants     | fireweed                                                                                                                                                                                                                  | fireweed<br>falsebox<br>red-stemmed<br>feathermoss                  | Douglas-fir<br>falsebox<br>red-stemmed<br>feathermoss                                          | Douglas-fir<br>falsebox<br>red-stemmed<br>feathermoss                                          | Douglas-fir<br>falsebox<br>red-stemmed<br>feathermoss                                          | Douglas-fir<br>falsebox<br>red-stemmed<br>feathermoss                                          | Douglas-fir<br>falsebox<br>red-stemmed<br>feathermoss                                          |
| Associates    | red-stemmed<br>feathermoss<br>prince's pine<br>knight's plume                                                                                                                                                             | Douglas-fir<br>black huckleberry<br>prince's pine<br>knight's plume | hybrid white spruce<br>western hemlock<br>black huckleberry<br>prince's pine<br>knight's plume | hybrid white spruce<br>western hemlock<br>black huckleberry<br>prince's pine<br>knight's plume | hybrid white spruce<br>western hemlock<br>black huckleberry<br>prince's pine<br>knight's plume | hybrid white spruce<br>western hemlock<br>black huckleberry<br>prince's pine<br>knight's plume | hybrid white spruce<br>western hemlock<br>black huckleberry<br>prince's pine<br>knight's plume |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (Delong and Fahlman 1996). |                                                                     |                                                                                                |                                                                                                |                                                                                                |                                                                                                |                                                                                                |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw1 /04 DS CwFd - Soopolallie - Douglas maple

| Map Unit                                                                                                                                                                        | BEC/Site series # | Description                               | CB Code  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------|----------|
| <b>DS</b>                                                                                                                                                                       | <b>ICHmw1 /04</b> | <b>CwFd - Soopolallie - Douglas maple</b> | <b>5</b> |
| DS typically occurs on significant slopes on a warm aspect with deep, medium-textured soils. Soil moisture is subxeric to submesic and soil nutrients from medium to very rich. |                   |                                           |          |

| Map Symbol    | DS2                                                                                                                                                                                 | DS3a,3b                                                                                                                            | DS4                                                                                                                                | DS5                                                                                                                                | DS6                                                                                                                                                  | DS7                                                                                                                                                  |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                          | Shrub/Herb                                                                                                                         | Pole sapling                                                                                                                       | Young forest                                                                                                                       | Mature forest                                                                                                                                        | Old forest                                                                                                                                           |
| Dominants     | fireweed                                                                                                                                                                            | lodgepole pine<br>Douglas-fir                                                                                                      | lodgepole pine<br>Douglas-fir                                                                                                      | lodgepole pine<br>Douglas-fir                                                                                                      | Douglas-fir                                                                                                                                          | Douglas-fir                                                                                                                                          |
| Associates    | prince's pine                                                                                                                                                                       | trembling aspen<br>saskatoon<br>soopolallie<br>falsebox<br>Douglas maple<br>birch-leaved spirea<br>prince's pine<br>knight's plume | trembling aspen<br>saskatoon<br>soopolallie<br>falsebox<br>Douglas maple<br>birch-leaved spirea<br>prince's pine<br>knight's plume | trembling aspen<br>saskatoon<br>soopolallie<br>falsebox<br>Douglas maple<br>birch-leaved spirea<br>prince's pine<br>knight's plume | lodgepole pine<br>trembling aspen<br>saskatoon<br>soopolallie<br>falsebox<br>Douglas maple<br>birch-leaved spirea<br>prince's pine<br>knight's plume | lodgepole pine<br>trembling aspen<br>saskatoon<br>soopolallie<br>falsebox<br>Douglas maple<br>birch-leaved spirea<br>prince's pine<br>knight's plume |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992) (see section 3.5). Successional sequences described above are a consequence of disturbance by wildfires. |                                                                                                                                    |                                                                                                                                    |                                                                                                                                    |                                                                                                                                                      |                                                                                                                                                      |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw1 /01 HF Hw Cw - Falsebox - Feathermoss

| Map Unit                                                                                                                                             | BEC/Site series # | Description                           | CB Code  |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|----------|
| <b>HF</b>                                                                                                                                            | <b>ICHmw1 /01</b> | <b>Hw Cw - Falsebox - Feathermoss</b> | <b>5</b> |
| HF typically occurs on gentle slopes with deep, medium-textured soils. Soil moisture is submesic to mesic and soil nutrients from poor to very rich. |                   |                                       |          |

| Map Symbol    | HF2                                                                                                                                                                                                                                                                                        | HF3a,3b                                                                                                                                             | HF4                                                                                                                                                                                       | HF5                                                                                                                                                                   | HF6                                                                                                                                                                          | HF7                                                                                                                                                        |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                                                                                                                                 | Shrub/Herb†                                                                                                                                         | Pole sapling                                                                                                                                                                              | Young forest                                                                                                                                                          | Mature forest                                                                                                                                                                | Old forest                                                                                                                                                 |
| Dominants     | fireweed                                                                                                                                                                                                                                                                                   | Douglas-fir<br>lodgepole pine<br>Utah honeysuckle<br>birch-leaved spirea                                                                            | Douglas-fir<br>lodgepole pine<br>red-stemmed<br>feathermoss<br>knight's plume                                                                                                             | Douglas-fir<br>lodgepole pine<br>western redcedar<br>red-stemmed<br>feathermoss<br>knight's plume                                                                     | Douglas-fir<br>western redcedar<br>subalpine fir<br>red-stemmed<br>feathermoss<br>knight's plume<br>step moss                                                                | Douglas-fir<br>western redcedar<br>subalpine fir<br>red-stemmed<br>feathermoss<br>knight's plume<br>step moss                                              |
| Associates    | one-sided wintergreen<br>bunchberry<br>prince's pine<br>twinsflower<br>pinegrass                                                                                                                                                                                                           | Sitka alder<br>hybrid white spruce<br>Douglas maple<br>one-sided wintergreen<br>bunchberry<br>prince's pine<br>fireweed<br>twinsflower<br>pinegrass | subalpine fir<br>hybrid white spruce<br>western redcedar<br>Douglas maple<br>Utah honeysuckle<br>birch-leaved spirea<br>one-sided wintergreen<br>bunchberry<br>prince's pine<br>step moss | subalpine fir<br>hybrid white spruce<br>Douglas maple<br>Utah honeysuckle<br>birch-leaved spirea<br>one-sided wintergreen<br>bunchberry<br>prince's pine<br>step moss | hybrid white spruce<br>lodgepole pine<br>western hemlock<br>Douglas maple<br>Utah honeysuckle<br>birch-leaved spirea<br>one-sided wintergreen<br>bunchberry<br>prince's pine | hybrid white spruce<br>western hemlock<br>Douglas maple<br>Utah honeysuckle<br>birch-leaved spirea<br>one-sided wintergreen<br>bunchberry<br>prince's pine |
| Comments      | Vegetation derived from Cummins Valley Project (Lowrey et al 1998) and the Nelson Field Guide (Braumandl and Curran 1992).<br>Successional sequences described above are a consequence of disturbance by wildfires.<br>†Vegetation data collected in sites disturbed by forest harvesting. |                                                                                                                                                     |                                                                                                                                                                                           |                                                                                                                                                                       |                                                                                                                                                                              |                                                                                                                                                            |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw1 /02 LJ PI – Juniper - Twinflower

| Map Unit                                                                                                                   | BEC/Site series # | Description                      | CB Code  |
|----------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------|----------|
| <b>LJ</b>                                                                                                                  | <b>ICHmw1 /02</b> | <b>PI – Juniper - Twinflower</b> | <b>5</b> |
| LJ typically occurs on gently sloped crest positions with deep, medium-textured soils. Soil moisture is xeric to subxeric. |                   |                                  |          |

| Map Symbol    | LJ2                                                                                                                                                                                                                                         | LJ3a,3b                                                                                   | LJ4                                                                                       | LJ5                                                                                       | LJ6                                                                                                         | LJ7                                                                                |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                                                                                  | Shrub/Herb†                                                                               | Pole sapling                                                                              | Young forest                                                                              | Mature forest                                                                                               | Old forest                                                                         |
| Dominants     | fireweed<br>twinflower<br>kinnikinnick                                                                                                                                                                                                      | lodgepole pine<br>common juniper<br>fireweed<br>twinflower<br>kinnikinnick                | lodgepole pine<br>hybrid white spruce<br>common juniper<br>twinflower<br>kinnikinnick     | lodgepole pine<br>hybrid white spruce<br>common juniper<br>twinflower<br>kinnikinnick     | hybrid white spruce<br>common juniper<br>twinflower<br>kinnikinnick                                         | Douglas-fir<br>hybrid white spruce<br>common juniper<br>twinflower<br>kinnikinnick |
| Associates    | step moss<br><i>cladonias</i><br>red-stemmed<br>feathermoss                                                                                                                                                                                 | Douglas-fir<br>soopolallie<br>step moss<br><i>cladonias</i><br>red-stemmed<br>feathermoss | Douglas-fir<br>soopolallie<br>step moss<br><i>cladonias</i><br>red-stemmed<br>feathermoss | Douglas-fir<br>soopolallie<br>step moss<br><i>cladonias</i><br>red-stemmed<br>feathermoss | Douglas-fir<br>lodgepole pine<br>soopolallie<br>step moss<br><i>cladonias</i><br>red-stemmed<br>feathermoss | soopolallie<br>step moss<br><i>cladonias</i><br>red-stemmed<br>feathermoss         |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992).<br>Successional sequences described above are a consequence of disturbance by wildfires.<br>†Vegetation data collected in sites disturbed by forest harvesting. |                                                                                           |                                                                                           |                                                                                           |                                                                                                             |                                                                                    |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw1 /05 RD Cw Hw - Devil's club - Lady fern

| Map Unit                                                                                                                                                                               | BEC/Site series # | Description                             | CB Code  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|----------|
| <b>RD</b>                                                                                                                                                                              | <b>ICHmw1 /05</b> | <b>Cw Hw - Devil's club - Lady fern</b> | <b>5</b> |
| RD typically occurs on gentle, lower slopes in a moisture receiving site and with deep, fine-textured soils. Soil moisture is mesic to subhygric and soil nutrients from poor to rich. |                   |                                         |          |

| Map Symbol    | RD2                                                                                                                                                                                                                                                                                                                                                                                                           | RD3a,3b                                                                                                                                                                               | RD4                                                                                                                        | RD5                                                                                                                          | RD6                                                                                                                          | RD7                                                                                                                          |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                                                                                                                                                                                                                                                    | Shrub/Herb†                                                                                                                                                                           | Pole sapling                                                                                                               | Young forest                                                                                                                 | Mature forest                                                                                                                | Old forest                                                                                                                   |
| Dominants     | fireweed                                                                                                                                                                                                                                                                                                                                                                                                      | Douglas-fir<br>mountain alder                                                                                                                                                         | western redcedar<br>Douglas-fir                                                                                            | western redcedar<br>Douglas-fir                                                                                              | western redcedar<br>Douglas-fir                                                                                              | western redcedar<br>Douglas-fir                                                                                              |
| Associates    | oak fern<br>bluejoint<br>one-leaved foamflower<br>rattlesnake-plantain<br>bunchberry                                                                                                                                                                                                                                                                                                                          | western redcedar<br>hybrid white spruce<br>black twinberry<br>red-osier dogwood<br>Devil's club<br>oak fern<br>bluejoint<br>one-leaved foamflower<br>rattlesnake-plantain<br>fireweed | hybrid white spruce<br>mountain alder Devil's club<br>rattlesnake-plantain<br>red-stemmed<br>feathermoss<br>knight's plume | hybrid white spruce<br>subalpine fir<br>Devil's club<br>rattlesnake-plantain<br>red-stemmed<br>feathermoss<br>knight's plume | hybrid white spruce<br>subalpine fir<br>Devil's club<br>rattlesnake-plantain<br>red-stemmed<br>feathermoss<br>knight's plume | hybrid white spruce<br>subalpine fir<br>Devil's club<br>rattlesnake-plantain<br>red-stemmed<br>feathermoss<br>knight's plume |
| Comments      | As cedar dominates in the latter structural stages, the understorey often becomes devoid of understorey species.<br>Vegetation derived from Cummins Valley Project (Lowrey et al 1998) and the Nelson Field Guide (Braumandl and Curran 1992).<br>Successional sequences described above are a consequence of disturbance by wildfires.<br>†Vegetation data collected in sites disturbed by forest harvesting |                                                                                                                                                                                       |                                                                                                                            |                                                                                                                              |                                                                                                                              |                                                                                                                              |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw1 /07 RH CwHw – Horsetail

| Map Unit                                                                                                                                                             | BEC/Site series # | Description             | CB Code      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------|--------------|
| <b>RH</b>                                                                                                                                                            | <b>ICHmw1 /07</b> | <b>CwHw - Horsetail</b> | <b>5, 24</b> |
| RH typically occurs on toe slopes or level sites with deep, coarse-textured soils. Soil moisture is subhygric to hygric and soil nutrients from medium to very rich. |                   |                         |              |

| Map Symbol    | RH2                                                                                                                                                                                                                                                                                                                                       | RH3                                                                         | RH4                                                                                                          | RH5                                                                                                                                                 | RH6                                                                         | RH7                                                                         |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                                                                                                                                                                                | Shrub/Herb                                                                  | Pole sapling                                                                                                 | Young forest                                                                                                                                        | Mature forest                                                               | Old forest                                                                  |
| Dominants     | common horsetail                                                                                                                                                                                                                                                                                                                          | western redcedar<br>mountain alder<br>red-osier dogwood<br>common horsetail | western redcedar<br>mountain alder<br>red-osier dogwood<br>common horsetail                                  | western redcedar<br>common horsetail                                                                                                                | western redcedar<br>step moss<br>knight's plume                             | western redcedar<br>step moss<br>knight's plume                             |
| Associates    | leafy mosses<br>wild sarsaparilla                                                                                                                                                                                                                                                                                                         | black cottonwood<br>highbush cranberry<br>leafy mosses<br>wild sarsaparilla | black cottonwood<br>hybrid white spruce<br>highbush cranberry<br>leafy mosses<br>step moss<br>knight's plume | black cottonwood<br>hybrid white spruce<br>mountain alder<br>highbush cranberry<br>red-osier dogwood<br>leafy mosses<br>step moss<br>knight's plume | black cottonwood<br>hybrid white spruce<br>common horsetail<br>leafy mosses | black cottonwood<br>hybrid white spruce<br>common horsetail<br>leafy mosses |
| Comments      | As western redcedar dominates in the latter structural stages, the understorey often lacks cover of understorey species. Vegetation derived from Cummins Valley Project (Lowrey et al 1998) and the Nelson Field Guide (Braumandl and Curran 1992). Successional sequences described above are a consequence of disturbance by wildfires. |                                                                             |                                                                                                              |                                                                                                                                                     |                                                                             |                                                                             |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw2/09 BS Bluejoint - Sedge

| Map Unit                                                                      | BEC/Site series # | Description              | CB Code       |
|-------------------------------------------------------------------------------|-------------------|--------------------------|---------------|
| <b>BS</b>                                                                     | <b>ICHmw2/09</b>  | <b>Bluejoint - Sedge</b> | <b>22, 24</b> |
| BS typically occurs on organic wetlands with subhydryc soil moisture regimes. |                   |                          |               |

| Map Symbol    | BS2                                                                         | BS3a                                    | BS3b                                                        | BS4                                                         | BS5                                                         | BS6                                                         | BS7                                                         |
|---------------|-----------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| Plant species | Grass-Forb                                                                  | Low shrub                               | Tall shrub                                                  | Pole sapling                                                | Young forest                                                | Mature forest                                               | Old forest                                                  |
| Dominants     | bluejoint<br>sedges                                                         | bluejoint<br>sedges                     | bluejoint<br>sedges                                         | bluejoint<br>sedges                                         | bluejoint<br>sedges                                         | bluejoint<br>sedges                                         | bluejoint<br>sedges                                         |
| Associates    | marsh cinquefoil                                                            | hybrid white spruce<br>marsh cinquefoil | western redcedar<br>hybrid white spruce<br>marsh cinquefoil | western redcedar<br>hybrid white spruce<br>marsh cinquefoil | western redcedar<br>hybrid white spruce<br>marsh cinquefoil | western redcedar<br>hybrid white spruce<br>marsh cinquefoil | western redcedar<br>hybrid white spruce<br>marsh cinquefoil |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992). |                                         |                                                             |                                                             |                                                             |                                                             |                                                             |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw2/03 DF CwFd - Falsebox

| Map Unit                                                                                                                                                                                                               | BEC/Site series # | Description            | CB Code  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|----------|
| <b>DF</b>                                                                                                                                                                                                              | <b>ICHmw2/03</b>  | <b>CwFd - Falsebox</b> | <b>5</b> |
| DF typically occurs on morainal and colluvial parent materials with deep, medium-textured soils and cool aspects. These sites generally have thick (6 cm) mor humus forms and submesic to mesic soil moisture regimes. |                   |                        |          |

| Map Symbol    | DF2                                                                         | DF3a                                                                                                                                        | DF3b                                                                                                                         | DF4                                                                                                                                             | DF5                                                                                                                                             | DF6                                                                                                                                                                                     | DF7                                                                                                                                                     |
|---------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                  | Low shrub                                                                                                                                   | Tall shrub                                                                                                                   | Pole sapling                                                                                                                                    | Young forest                                                                                                                                    | Mature forest                                                                                                                                                                           | Old forest                                                                                                                                              |
| Dominants     | open sites of:<br>fireweed                                                  | shrubby sites of:<br>thimbleberry<br>saskatoon<br>soopolallie                                                                               | shrubby sites of:<br>paper birch<br>thimbleberry<br>saskatoon<br>soopolallie                                                 | dense stands of:<br>Douglas-fir<br>western larch<br>saskatoon<br>soopolallie                                                                    | closed forests of:<br>Douglas-fir<br>western larch<br>saskatoon<br>soopolallie                                                                  | closed forests of:<br>western redcedar<br>red-stemmed feather<br>moss                                                                                                                   | closed forests of:<br>western redcedar<br>red-stemmed feather<br>moss                                                                                   |
| Associates    | thimbleberry<br>bracken                                                     | Douglas-fir<br>paper birch<br>black huckleberry<br>trembling aspen<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup | Douglas-fir<br>black huckleberry<br>trembling aspen<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup | western redcedar<br>western hemlock<br>paper birch<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup<br>pipecleaner moss | western redcedar<br>western hemlock<br>paper birch<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup<br>pipecleaner moss | Douglas-fir<br>western hemlock<br>western larch<br>paper birch<br>saskatoon<br>soopolallie<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup<br>pipecleaner moss | Douglas-fir<br>western hemlock<br>birch-leaved spirea<br>saskatoon<br>soopolallie<br>falsebox<br>hooker's fairybells<br>queen's cup<br>pipecleaner moss |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                                             |                                                                                                                              |                                                                                                                                                 |                                                                                                                                                 |                                                                                                                                                                                         |                                                                                                                                                         |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw2/01 HF HwCw - Falsebox - Feathermoss

| Map Unit                                                                                                                                                                                                                                                 | BEC/Site series # | Description                          | CB Code  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------|----------|
| <b>HF</b>                                                                                                                                                                                                                                                | <b>ICHmw2/01</b>  | <b>HwCw - Falsebox - Feathermoss</b> | <b>5</b> |
| HF typically occurs on gently sloping morainal blankets with deep, medium-textured soils. These sites are often in mid slope and crest positions. These sites generally have mesic moisture regimes and moderately thick (6 cm) mor (moder) humus forms. |                   |                                      |          |

| Map Symbol    | HF2                                                                         | HF3a                                                                                       | HF3b                                                                                                    | HF4                                                                                                      | HF5                                                                                                                                             | HF6                                                                                                                         | HF7                                                                                                         |
|---------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                  | Low shrub                                                                                  | Tall shrub                                                                                              | Pole sapling                                                                                             | Young forest                                                                                                                                    | Mature forest                                                                                                               | Old forest                                                                                                  |
| Dominants     | open sites of:<br>fireweed                                                  | shrubby sites of:<br>common Snowberry<br>thimbleberry                                      | shrubby sites of:<br>Douglas-maple<br>trembling aspen<br>common snowberry                               | dense stands of:<br>trembling aspen<br>common snowberry                                                  | closed stands of:<br>trembling aspen<br>common snowberry                                                                                        | closed stands of:<br>western redcedar<br>western hemlock<br>common snowberry<br>red-stemmed<br>feather moss                 | closed stands of:<br>western redcedar<br>western hemlock<br>common snowberry<br>red-stemmed<br>feather moss |
| Associates    | trembling aspen<br>thimbleberry<br>queen's cup<br>clasping twistedstalk     | trembling aspen<br>falsebox<br>showy aster<br>western meadowrue<br>queen's cup<br>fireweed | thimbleberry<br>falsebox<br>showy aster<br>western meadowrue<br>queen's cup<br>clasping<br>twistedstalk | Douglas-maple<br>falsebox<br>showy aster<br>western meadowrue<br>queen's cup<br>clasping<br>twistedstalk | western redcedar<br>western hemlock<br>Douglas-maple<br>falsebox<br>showy aster<br>western meadowrue<br>queen's cup<br>clasping<br>twistedstalk | trembling aspen<br>Douglas-maple<br>falsebox<br>showy aster<br>western meadowrue<br>queen's cup<br>clasping<br>twistedstalk | Douglas-maple<br>falsebox<br>showy aster<br>western meadowrue<br>queen's cup<br>clasping twistedstalk       |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                            |                                                                                                         |                                                                                                          |                                                                                                                                                 |                                                                                                                             |                                                                                                             |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw2/05 HO HwCw - Falsebox - Feathermoss

| Map Unit                                                                                                                                                | BEC/Site series # | Description                          | CB Code  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------|----------|
| <b>HO</b>                                                                                                                                               | <b>ICHmw2/05</b>  | <b>HwCw - Falsebox - Feathermoss</b> | <b>5</b> |
| HO typically occurs on gently sloping receiving sites with deep, medium-textured soils. These sites generally have mesic to subhygric moisture regimes. |                   |                                      |          |

| Map Symbol    | HO2                                                                           | HO3a                                                                                                           | HO3b                                                                                                                                  | HO4                                                                                                                                   | HO5                                                                                                                                   | HO6                                                                                                                                   | HO7                                                                                                                                   |
|---------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                    | Low shrub                                                                                                      | Tall shrub                                                                                                                            | Pole sapling                                                                                                                          | Young forest                                                                                                                          | Mature forest                                                                                                                         | Old forest                                                                                                                            |
| Dominants     | fireweed<br>one-leaved<br>foamflower<br>oak fern<br>pipecleaner moss          | western redcedar<br>western hemlock<br>fireweed<br>one-leaved<br>foamflower<br>oak fern<br>pipecleaner moss    | western redcedar<br>western hemlock<br>one-leaved<br>foamflower<br>oak fern<br>pipecleaner moss                                       | western redcedar<br>western hemlock<br>one-leaved<br>foamflower<br>oak fern<br>pipecleaner moss                                       | western redcedar<br>western hemlock<br>one-leaved<br>foamflower<br>oak fern<br>pipecleaner moss                                       | western redcedar<br>western hemlock<br>one-leaved<br>foamflower<br>oak fern<br>pipecleaner moss                                       | western redcedar<br>western hemlock<br>one-leaved<br>foamflower<br>oak fern<br>pipecleaner moss                                       |
| Associates    | queen's cup<br>five-leaved bramble<br>lady fern<br>red-stemmed<br>feathermoss | falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>lady fern<br>red-stemmed<br>feathermoss | hybrid white spruce<br>falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>lady fern<br>red-stemmed<br>feathermoss | hybrid white spruce<br>falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>lady fern<br>red-stemmed<br>feathermoss | hybrid white spruce<br>falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>lady fern<br>red-stemmed<br>feathermoss | hybrid white spruce<br>falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>lady fern<br>red-stemmed<br>feathermoss | hybrid white spruce<br>falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>lady fern<br>red-stemmed<br>feathermoss |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992).   |                                                                                                                |                                                                                                                                       |                                                                                                                                       |                                                                                                                                       |                                                                                                                                       |                                                                                                                                       |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw2/02 RC Rhacomitrium - Cladonia

| Map Unit                                                                                                                                                   | BEC/Site series # | Description                    | CB Code      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------|--------------|
| <b>RC</b>                                                                                                                                                  | <b>ICHmw2/02</b>  | <b>Rhacomitrium - Cladonia</b> | <b>5, 98</b> |
| RC typically occurs on gently sloping crest positions with shallow, medium-textured soils. These sites generally have mesic to subhygric moisture regimes. |                   |                                |              |

| Map Symbol    | RC2                                                                         | RC3a                                                       | RC3b                                                       | RC4                                                        | RC5                                                        | RC6                                                        | RC7                                                        |
|---------------|-----------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| Plant species | Grass-Forb                                                                  | Low shrub                                                  | Tall shrub                                                 | Pole sapling                                               | Young forest                                               | Mature forest                                              | Old forest                                                 |
| Dominants     | rock mosses<br><i>cladonias</i>                                             | rock mosses<br><i>cladonias</i>                            | rock mosses<br><i>cladonias</i>                            | rock mosses<br><i>cladonias</i>                            | rock mosses<br><i>cladonias</i>                            | rock mosses<br><i>cladonias</i>                            | rock mosses<br><i>cladonias</i>                            |
| Associates    | parsley fern                                                                | Douglas-fir<br>lodgepole pine<br>saskatoon<br>parsley fern | Douglas-fir<br>lodgepole pine<br>saskatoon<br>parsley fern | Douglas-fir<br>lodgepole pine<br>saskatoon<br>parsley fern | Douglas-fir<br>lodgepole pine<br>saskatoon<br>parsley fern | Douglas-fir<br>lodgepole pine<br>saskatoon<br>parsley fern | Douglas-fir<br>lodgepole pine<br>saskatoon<br>parsley fern |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992). |                                                            |                                                            |                                                            |                                                            |                                                            |                                                            |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw2/06 RD HwCw – Devil's club – Lady fern

| Map Unit                                                                                                                                                 | BEC/Site series # | Description                            | CB Code  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------|----------|
| <b>RD</b>                                                                                                                                                | <b>ICHmw2/06</b>  | <b>HwCw – Devil's club – Lady fern</b> | <b>5</b> |
| RD typically occurs on gently sloping receiving sites with deep, medium-textured soils. These sites generally have subhygric to hygric moisture regimes. |                   |                                        |          |

| Map Symbol    | RD2                                                                                  | RD3a                                                                                                                  | RD3b                                                                                                                                         | RD4                                                                                                                                          | RD5                                                                                                                                          | RD6                                                                                                                                          | RD7                                                                                                                                          |
|---------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                           | Low shrub                                                                                                             | Tall shrub                                                                                                                                   | Pole sapling                                                                                                                                 | Young forest                                                                                                                                 | Mature forest                                                                                                                                | Old forest                                                                                                                                   |
| Dominants     | lady fern<br>one-leaved<br>foamflower<br>oak fern                                    | western redcedar<br>western hemlock<br>devil's club<br>lady fern<br>one-leaved<br>foamflower<br>oak fern              | western redcedar<br>western hemlock<br>devil's club<br>lady fern<br>one-leaved<br>foamflower<br>oak fern                                     | western redcedar<br>western hemlock<br>devil's club<br>lady fern<br>one-leaved<br>foamflower<br>oak fern                                     | western redcedar<br>western hemlock<br>devil's club<br>lady fern<br>one-leaved<br>foamflower<br>oak fern                                     | western redcedar<br>western hemlock<br>devil's club<br>lady fern<br>one-leaved<br>foamflower<br>oak fern                                     | western redcedar<br>western hemlock<br>devil's club<br>lady fern<br>one-leaved<br>foamflower<br>oak fern                                     |
| Associates    | queen's cup<br>five-leaved bramble<br>red-stemmed<br>feathermoss<br>pipecleaner moss | falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>red-stemmed<br>feathermoss<br>pipecleaner moss | hybrid white spruce<br>falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>red-stemmed<br>feathermoss<br>pipecleaner moss | hybrid white spruce<br>falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>red-stemmed<br>feathermoss<br>pipecleaner moss | hybrid white spruce<br>falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>red-stemmed<br>feathermoss<br>pipecleaner moss | hybrid white spruce<br>falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>red-stemmed<br>feathermoss<br>pipecleaner moss | hybrid white spruce<br>falsebox<br>black huckleberry<br>queen's cup<br>five-leaved bramble<br>red-stemmed<br>feathermoss<br>pipecleaner moss |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992).          |                                                                                                                       |                                                                                                                                              |                                                                                                                                              |                                                                                                                                              |                                                                                                                                              |                                                                                                                                              |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw2/04 RF CwFd - Falsebox

| Map Unit                                                                            | BEC/Site series # | Description            | CB Code  |
|-------------------------------------------------------------------------------------|-------------------|------------------------|----------|
| <b>RF</b>                                                                           | <b>ICHmw2/04</b>  | <b>CwFd - Falsebox</b> | <b>5</b> |
| RF typically occurs on significant slope, cool aspect; deep, medium-textured soils. |                   |                        |          |

| Map Symbol    | RF2                                                                         | RF3a                                                                                                                                        | RF3b                                                                                                                         | RF4                                                                                                                                             | RF5                                                                                                                                             | RF6                                                                                                                                                         | RF7                                                                                                                         |
|---------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                  | Low shrub                                                                                                                                   | Tall shrub                                                                                                                   | Pole sapling                                                                                                                                    | Young forest                                                                                                                                    | Mature forest                                                                                                                                               | Old forest                                                                                                                  |
| Dominants     | open sites of:<br>fireweed                                                  | shrubby sites of:<br>thimbleberry                                                                                                           | shrubby sites of:<br>paper birch<br>thimbleberry                                                                             | dense stands of:<br>Douglas-fir<br>western larch                                                                                                | closed forests of:<br>Douglas-fir<br>western larch                                                                                              | closed forests of:<br>western redcedar<br>red-stemmed<br>feather moss                                                                                       | closed forests of:<br>western redcedar<br>red-stemmed<br>feather moss                                                       |
| Associates    | thimbleberry<br>bracken                                                     | Douglas-fir<br>paper birch<br>black huckleberry<br>trembling aspen<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup | Douglas-fir<br>black huckleberry<br>trembling aspen<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup | western redcedar<br>western hemlock<br>paper birch<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup<br>pipecleaner moss | western redcedar<br>western hemlock<br>paper birch<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup<br>pipecleaner moss | Douglas-fir<br>western hemlock<br>western larch<br>paper birch<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup<br>pipecleaner moss | Douglas-fir<br>western hemlock<br>birch-leaved spirea<br>falsebox<br>hooker's fairybells<br>queen's cup<br>pipecleaner moss |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                                             |                                                                                                                              |                                                                                                                                                 |                                                                                                                                                 |                                                                                                                                                             |                                                                                                                             |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw2/07 RH HwCw - Horsetail

| Map Unit                                                                                                                         | BEC/Site series # | Description             | CB Code      |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------|--------------|
| <b>RH</b>                                                                                                                        | <b>ICHmw2/07</b>  | <b>HwCw - Horsetail</b> | <b>5, 24</b> |
| RH typically occurs on level receiving sites with deep, fine-textured soils. These sites generally have hygric moisture regimes. |                   |                         |              |

| Map Symbol    | RH2                                                                         | RH3a                                                                                                   | RH3b                                                                                                                          | RH4                                                                                                                           | RH5                                                                                                                           | RH6                                                                                                                           | RH7                                                                                                                           |
|---------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                  | Low shrub                                                                                              | Tall shrub                                                                                                                    | Pole sapling                                                                                                                  | Young forest                                                                                                                  | Mature forest                                                                                                                 | Old forest                                                                                                                    |
| Dominants     | common horsetail<br>leafy mosses                                            | western redcedar<br>western hemlock<br>red-osier dogwood<br>common horsetail<br>leafy mosses           | western redcedar<br>western hemlock<br>red-osier dogwood<br>common horsetail<br>leafy mosses                                  | western redcedar<br>western hemlock<br>red-osier dogwood<br>common horsetail<br>leafy mosses                                  | western redcedar<br>western hemlock<br>red-osier dogwood<br>common horsetail<br>leafy mosses                                  | western redcedar<br>western hemlock<br>red-osier dogwood<br>common horsetail<br>leafy mosses                                  | western redcedar<br>western hemlock<br>red-osier dogwood<br>common horsetail<br>leafy mosses                                  |
| Associates    | one-leaved<br>foamflower<br>red-stemmed<br>feathermoss                      | black cottonwood<br>oval-leaved<br>blueberry<br>one-leaved<br>foamflower<br>red-stemmed<br>feathermoss | black cottonwood<br>hybrid white spruce<br>oval-leaved<br>blueberry<br>one-leaved<br>foamflower<br>red-stemmed<br>feathermoss | black cottonwood<br>hybrid white spruce<br>oval-leaved<br>blueberry<br>one-leaved<br>foamflower<br>red-stemmed<br>feathermoss | black cottonwood<br>hybrid white spruce<br>oval-leaved<br>blueberry<br>one-leaved<br>foamflower<br>red-stemmed<br>feathermoss | black cottonwood<br>hybrid white spruce<br>oval-leaved<br>blueberry<br>one-leaved<br>foamflower<br>red-stemmed<br>feathermoss | black cottonwood<br>hybrid white spruce<br>oval-leaved<br>blueberry<br>one-leaved<br>foamflower<br>red-stemmed<br>feathermoss |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                        |                                                                                                                               |                                                                                                                               |                                                                                                                               |                                                                                                                               |                                                                                                                               |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw2/08 RS CwSxw – Skunk cabbage

| Map Unit                                                                                                                                                | BEC/Site series # | Description                  | CB Code      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------|--------------|
| <b>RS</b>                                                                                                                                               | <b>ICHmw2/08</b>  | <b>CwSxw – Skunk cabbage</b> | <b>5, 24</b> |
| RS typically occurs on poorly drained mineral swamps with deep, medium-textured soils. These sites generally have hygric to subhydryc moisture regimes. |                   |                              |              |

| Map Symbol    | RS2                                                                         | RS3a                                                                                                                        | RS3b                                                                                                                                               | RS4                                                                                                                                                | RS5                                                                                                                                                | RS6                                                                                                                                                | RS7                                                                                                                                                |
|---------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                  | Low shrub                                                                                                                   | Tall shrub                                                                                                                                         | Pole sapling                                                                                                                                       | Young forest                                                                                                                                       | Mature forest                                                                                                                                      | Old forest                                                                                                                                         |
| Dominants     | skunk cabbage<br>lady fern<br>one-leaved<br>foamflower<br>leafy mosses      | western hemlock<br>western redcedar<br>skunk cabbage<br>lady fern<br>one-leaved<br>foamflower<br>leafy mosses               | western hemlock<br>western redcedar<br>skunk cabbage<br>lady fern<br>one-leaved<br>foamflower<br>leafy mosses                                      | western hemlock<br>western redcedar<br>skunk cabbage<br>lady fern<br>one-leaved<br>foamflower<br>leafy mosses                                      | western hemlock<br>western redcedar<br>skunk cabbage<br>lady fern<br>one-leaved<br>foamflower<br>leafy mosses                                      | western hemlock<br>western redcedar<br>skunk cabbage<br>lady fern<br>one-leaved<br>foamflower<br>leafy mosses                                      | western hemlock<br>western redcedar<br>skunk cabbage<br>lady fern<br>one-leaved<br>foamflower<br>leafy mosses                                      |
| Associates    | bunchberry<br>common horsetail<br>oak fern<br>red-stemmed<br>feathermoss    | oval-leaved<br>huckleberry<br>black huckleberry<br>bunchberry<br>common horsetail<br>oak fern<br>red-stemmed<br>feathermoss | hybrid white spruce<br>oval-leaved<br>huckleberry<br>black huckleberry<br>bunchberry<br>common horsetail<br>oak fern<br>red-stemmed<br>feathermoss | hybrid white spruce<br>oval-leaved<br>huckleberry<br>black huckleberry<br>bunchberry<br>common horsetail<br>oak fern<br>red-stemmed<br>feathermoss | hybrid white spruce<br>oval-leaved<br>huckleberry<br>black huckleberry<br>bunchberry<br>common horsetail<br>oak fern<br>red-stemmed<br>feathermoss | hybrid white spruce<br>oval-leaved<br>huckleberry<br>black huckleberry<br>bunchberry<br>common horsetail<br>oak fern<br>red-stemmed<br>feathermoss | hybrid white spruce<br>oval-leaved<br>huckleberry<br>black huckleberry<br>bunchberry<br>common horsetail<br>oak fern<br>red-stemmed<br>feathermoss |
| Comments      | Vegetation derived from the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                             |                                                                                                                                                    |                                                                                                                                                    |                                                                                                                                                    |                                                                                                                                                    |                                                                                                                                                    |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

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### ICHmw2/00 XX Combined site series of RD(06), RH (07) and RS (08)

| Map Unit                                                                                                                                                                                      | BEC/Site series # | Description                                         | CB Code |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------|---------|
| XX                                                                                                                                                                                            | ICHmw2/00         | Combined site series of RD(06), RH (07) and RS (08) | 5       |
| RD, RH and RS are sometimes combined as these site series are difficult to distinguish separately from air photos. This represents a valley bottom complex that may contain black cottonwood. |                   |                                                     |         |

### ICHmw2/00 XY Combined site series of 80% RH (07) and 20% RS (08)

| Map Unit                                                                                                                                                                                  | BEC/Site series # | Description                                         | CB Code |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------|---------|
| XY                                                                                                                                                                                        | ICHmw2/00         | Combined site series of 80% RH (07) and 20% RS (08) | 5       |
| RH and RS are sometimes combined as these site series are difficult to distinguish separately from air photos. This represents a valley bottom complex that may contain black cottonwood. |                   |                                                     |         |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw3/02 DJ Fd – Juniper - Cladina

| Map Unit                                                                                                                                          | BEC/Site series # | Description                   | CB Code   |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------|-----------|
| <b>DJ</b>                                                                                                                                         | <b>ICHmw3/02</b>  | <b>Fd – Juniper - Cladina</b> | <b>98</b> |
| DJ typically occurs on a significant slope; warm aspect, medium-textured shallow soils over bedrock. Very xeric to subxeric soil moisture regime. |                   |                               |           |

| Structural stage | DJ2                                                                  | DJ3a                                                    | DJ3b                                                                        | DJ4                                                                         | DJ5                                                       | DJ6                                                       | DJ7                                                       |
|------------------|----------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Plant species    | Grass-Forb                                                           | Low shrub                                               | Tall shrub                                                                  | Pole sapling                                                                | Young forest                                              | Mature forest                                             | Old forest                                                |
| Dominants        | kinnikinnick<br>pinegrass<br>fescue                                  | Douglas-fir<br>common juniper<br>kinnikinnick           | Douglas-fir<br>common juniper<br>kinnikinnick                               | Douglas-fir<br>common juniper<br>kinnikinnick                               | Douglas-fir<br>common juniper<br>kinnikinnick             | Douglas-fir<br>common juniper<br>kinnikinnick             | Douglas-fir<br>common juniper<br>kinnikinnick             |
| Associates       | cladina                                                              | lodgepole pine<br>cladina<br>red-stemmed<br>feathermoss | lodgepole pine<br>western redcedar<br>cladina<br>red-stemmed<br>feathermoss | lodgepole pine<br>western redcedar<br>cladina<br>red-stemmed<br>feathermoss | western redcedar<br>cladina<br>red-stemmed<br>feathermoss | western redcedar<br>cladina<br>red-stemmed<br>feathermoss | western redcedar<br>cladina<br>red-stemmed<br>feathermoss |
| Comments         | Vegetation derived from the Kamloops Field Guide (Lloyd et al 1990). |                                                         |                                                                             |                                                                             |                                                           |                                                           |                                                           |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw3/01 HF HwCw – Falsebox - Feathermoss

| Map Unit                                                                                                       | BEC/Site series # | Description                          | CB Code  |
|----------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------|----------|
| <b>HF</b>                                                                                                      | <b>ICHmw3/01</b>  | <b>HwCw – Falsebox - Feathermoss</b> | <b>5</b> |
| HF typically occurs on gentle slopes with deep, medium-textured soils. Submesic to mesic soil moisture regime. |                   |                                      |          |

| Structural stage | HF2                                                                  | HF3a                                                                       | HF3b                                                           | HF4                                                            | HF5                                                            | HF6                                                            | HF7                                                            |
|------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| Plant species    | Grass-Forb                                                           | Low shrub                                                                  | Tall shrub                                                     | Pole sapling                                                   | Young forest                                                   | Mature forest                                                  | Old forest                                                     |
| Dominants        | fireweed                                                             | Douglas-fir<br>western redcedar<br>western hemlock<br>falsebox<br>fireweed | Douglas-fir<br>western redcedar<br>western hemlock<br>falsebox | Douglas-fir<br>western redcedar<br>western hemlock<br>falsebox | Douglas-fir<br>western redcedar<br>western hemlock<br>falsebox | Douglas-fir<br>western redcedar<br>western hemlock<br>falsebox | Douglas-fir<br>western redcedar<br>western hemlock<br>falsebox |
| Associates       | twin flower<br>prince's pine                                         | twin flower<br>prince's pine                                               | twin flower<br>prince's pine                                   | twin flower<br>prince's pine                                   | twin flower<br>prince's pine                                   | twin flower<br>prince's pine                                   | twin flower<br>prince's pine                                   |
| Comments         | Vegetation derived from the Kamloops Field Guide (Lloyd et al 1990). |                                                                            |                                                                |                                                                |                                                                |                                                                |                                                                |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw3/06 HO CwHw – Oak fern

| Map Unit                                                                                                                              | BEC/Site series # | Description            | CB Code  |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|----------|
| <b>HO</b>                                                                                                                             | <b>ICHmw3/06</b>  | <b>CwHw – Oak fern</b> | <b>5</b> |
| HO typically occurs on gentle, lower slope receiving sites with deep, medium-textured soils. Mesic to subhygric soil moisture regime. |                   |                        |          |

| Structural stage | HO2                                                                                            | HO3a                                                                                       | HO3b                                                                           | HO4                                                                            | HO5                                                                            | HO6                                                                            | HO7                                                                            |
|------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                                                     | Low shrub                                                                                  | Tall shrub                                                                     | Pole sapling                                                                   | Young forest                                                                   | Mature forest                                                                  | Old forest                                                                     |
| Dominants        | fireweed                                                                                       | western redcedar<br>western hemlock<br>fireweed<br>red-stemmed<br>feathermoss<br>step moss | western redcedar<br>western hemlock<br>red-stemmed<br>feathermoss<br>step moss | western redcedar<br>western hemlock<br>red-stemmed<br>feathermoss<br>step moss | western redcedar<br>western hemlock<br>red-stemmed<br>feathermoss<br>step moss | western redcedar<br>western hemlock<br>red-stemmed<br>feathermoss<br>step moss | western redcedar<br>western hemlock<br>red-stemmed<br>feathermoss<br>step moss |
| Associates       | queen's cup<br>oak fern<br>one-leaved<br>foamflower<br>red-stemmed<br>feathermoss<br>step moss | queen's cup<br>oak fern<br>one-leaved<br>foamflower                                        | queen's cup<br>oak fern<br>one-leaved<br>foamflower                            | queen's cup<br>oak fern<br>one-leaved<br>foamflower                            | queen's cup<br>oak fern<br>one-leaved<br>foamflower                            | queen's cup<br>oak fern<br>one-leaved<br>foamflower                            | queen's cup<br>oak fern<br>one-leaved<br>foamflower                            |
| Comments         | Vegetation derived from the Kamloops Field Guide (Lloyd et al 1990).                           |                                                                                            |                                                                                |                                                                                |                                                                                |                                                                                |                                                                                |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw3/08 RC CwSxw – Skunk cabbage

| Map Unit                                                                                                                                            | BEC/Site series # | Description                  | CB Code      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------|--------------|
| <b>RC</b>                                                                                                                                           | <b>ICHmw3/08</b>  | <b>CwSxw – Skunk cabbage</b> | <b>5, 24</b> |
| RC typically occurs on level to depressional sites with deep medium-textured soil and a high water table. Subhygric to hygric soil moisture regime. |                   |                              |              |

| Structural stage | RC2                                                                  | RC3a                                                                                          | RC3b                                                                                          | RC4                                                                                           | RC5                                                                                           | RC6                                                                                           | RC7                                                                                           |
|------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                           | Low shrub                                                                                     | Tall shrub                                                                                    | Pole sapling                                                                                  | Young forest                                                                                  | Mature forest                                                                                 | Old forest                                                                                    |
| Dominants        | lady fern<br>skunk cabbage                                           | western redcedar<br>western hemlock<br>oval-leaved<br>blueberry<br>lady fern<br>skunk cabbage | western redcedar<br>western hemlock<br>oval-leaved<br>blueberry<br>lady fern<br>skunk cabbage | western redcedar<br>western hemlock<br>oval-leaved<br>blueberry<br>lady fern<br>skunk cabbage | western redcedar<br>western hemlock<br>oval-leaved<br>blueberry<br>lady fern<br>skunk cabbage | western redcedar<br>western hemlock<br>oval-leaved<br>blueberry<br>lady fern<br>skunk cabbage | western redcedar<br>western hemlock<br>oval-leaved<br>blueberry<br>lady fern<br>skunk cabbage |
| Associates       | bunchberry<br>step moss<br>leafy mosses                              | devil's club<br>bunchberry<br>step moss<br>leafy mosses                                       | devil's club<br>bunchberry<br>step moss<br>leafy mosses                                       | devil's club<br>bunchberry<br>step moss<br>leafy mosses                                       | devil's club<br>bunchberry<br>step moss<br>leafy mosses                                       | devil's club<br>bunchberry<br>step moss<br>leafy mosses                                       | devil's club<br>bunchberry<br>step moss<br>leafy mosses                                       |
| Comments         | Vegetation derived from the Kamloops Field Guide (Lloyd et al 1990). |                                                                                               |                                                                                               |                                                                                               |                                                                                               |                                                                                               |                                                                                               |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw3/07 RD CwHw – Devil's club – Lady fern

| Map Unit                                                                                                                                   | BEC/Site series # | Description                            | CB Code  |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------|----------|
| <b>RD</b>                                                                                                                                  | <b>ICHmw3/07</b>  | <b>CwHw – Devil's club – Lady fern</b> | <b>5</b> |
| RD typically occurs on gentle, lower slope receiving positions with deep, medium-textured soils. Subhygric to hygric soil moisture regime. |                   |                                        |          |

| Structural stage | RD2                                                                  | RD3a                                                                                        | RD3b                                                                                        | RD4                                                                                         | RD5                                                                                         | RD6                                                                                         | RD7                                                                                         |
|------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                           | Low shrub                                                                                   | Tall shrub                                                                                  | Pole sapling                                                                                | Young forest                                                                                | Mature forest                                                                               | Old forest                                                                                  |
| Dominants        | fireweed<br>oak fern<br>one-leaved<br>foamflower                     | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower |
| Associates       | bunchberry<br>lady fern<br>step moss                                 | fireweed<br>bunchberry<br>lady fern<br>step moss                                            | bunchberry<br>lady fern<br>step moss                                                        | bunchberry<br>lady fern<br>step moss                                                        | bunchberry<br>lady fern<br>step moss                                                        | bunchberry<br>lady fern<br>step moss                                                        | bunchberry<br>lady fern<br>step moss                                                        |
| Comments         | Vegetation derived from the Kamloops Field Guide (Lloyd et al 1990). |                                                                                             |                                                                                             |                                                                                             |                                                                                             |                                                                                             |                                                                                             |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw3/05 RF CwFd - Falsebox

| Map Unit                                                                                                       | BEC/Site series # | Description            | CB Code  |
|----------------------------------------------------------------------------------------------------------------|-------------------|------------------------|----------|
| <b>RF</b>                                                                                                      | <b>ICHmw3/05</b>  | <b>CwFd - Falsebox</b> | <b>5</b> |
| RF typically occurs on gentle slopes with deep, medium-textured soils. Submesic to mesic soil moisture regime. |                   |                        |          |

| Structural stage | RF2                                                                  | RF3a                                                               | RF3b                                                                       | RF4                                                                        | RF5                                                                        | RF6                                                                        | RF7                                                                        |
|------------------|----------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                           | Low shrub                                                          | Tall shrub                                                                 | Pole sapling                                                               | Young forest                                                               | Mature forest                                                              | Old forest                                                                 |
| Dominants        | fireweed<br>twinflower<br>prince's pine                              | Douglas-fir<br>falsebox<br>twinflower<br>fireweed<br>prince's pine | Douglas-fir<br>western redcedar<br>falsebox<br>twinflower<br>prince's pine | Douglas-fir<br>western redcedar<br>falsebox<br>twinflower<br>prince's pine | Douglas-fir<br>western redcedar<br>falsebox<br>twinflower<br>prince's pine | Douglas-fir<br>western redcedar<br>falsebox<br>twinflower<br>prince's pine | Douglas-fir<br>western redcedar<br>falsebox<br>twinflower<br>prince's pine |
| Associates       | birch-leaved spirea<br>red-stemmed<br>feathermoss                    | birch-leaved spirea<br>red-stemmed<br>feathermoss                  | birch-leaved spirea<br>red-stemmed<br>feathermoss                          | birch-leaved spirea<br>red-stemmed<br>feathermoss                          | birch-leaved spirea<br>red-stemmed<br>feathermoss                          | birch-leaved spirea<br>red-stemmed<br>feathermoss                          | birch-leaved spirea<br>red-stemmed<br>feathermoss                          |
| Comments         | Vegetation derived from the Kamloops Field Guide (Lloyd et al 1990). |                                                                    |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw3/04 RS CwFd – Soopolallie - Twinflower

| Map Unit                                                                                                       | BEC/Site series # | Description                            | CB Code  |
|----------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------|----------|
| <b>RS</b>                                                                                                      | <b>ICHmw3/04</b>  | <b>CwFd – Soopolallie - Twinflower</b> | <b>5</b> |
| RS typically occurs on gentle slopes with deep, medium-textured soils. Subxeric to mesic soil moisture regime. |                   |                                        |          |

| Structural stage | RS2                                                                  | RS3a                                                                                 | RS3b                                                                                                        | RS4                                                                                                         | RS5                                                                                                         | RS6                                                                                                         | RS7                                                                                                         |
|------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                           | Low shrub                                                                            | Tall shrub                                                                                                  | Pole sapling                                                                                                | Young forest                                                                                                | Mature forest                                                                                               | Old forest                                                                                                  |
| Dominants        | fireweed<br>twinflower<br>prince's pine                              | lodgepole pine<br>soopolallie<br>falsebox<br>twinflower<br>fireweed<br>prince's pine | Douglas-fir<br>lodgepole pine<br>western redcedar<br>soopolallie<br>falsebox<br>twinflower<br>prince's pine | Douglas-fir<br>lodgepole pine<br>western redcedar<br>soopolallie<br>falsebox<br>twinflower<br>prince's pine | Douglas-fir<br>lodgepole pine<br>western redcedar<br>soopolallie<br>falsebox<br>twinflower<br>prince's pine | Douglas-fir<br>lodgepole pine<br>western redcedar<br>soopolallie<br>falsebox<br>twinflower<br>prince's pine | Douglas-fir<br>lodgepole pine<br>western redcedar<br>soopolallie<br>falsebox<br>twinflower<br>prince's pine |
| Associates       | red-stemmed<br>feathermoss                                           | Douglas-fir<br>birch-leaved spirea<br>red-stemmed<br>feathermoss                     | birch-leaved spirea<br>red-stemmed<br>feathermoss                                                           | birch-leaved spirea<br>red-stemmed<br>feathermoss                                                           | birch-leaved spirea<br>red-stemmed<br>feathermoss                                                           | birch-leaved spirea<br>red-stemmed<br>feathermoss                                                           | birch-leaved spirea<br>red-stemmed<br>feathermoss                                                           |
| Comments         | Vegetation derived from the Kamloops Field Guide (Lloyd et al 1990). |                                                                                      |                                                                                                             |                                                                                                             |                                                                                                             |                                                                                                             |                                                                                                             |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHmw3/09 SE Sedge - Sphagnum

| Map Unit                                                                 | BEC/Site series # | Description             | CB Code   |
|--------------------------------------------------------------------------|-------------------|-------------------------|-----------|
| <b>SE</b>                                                                | <b>ICHmw3/09</b>  | <b>Sedge - Sphagnum</b> | <b>22</b> |
| SE typically occurs on organic wetlands. Subhydric soil moisture regime. |                   |                         |           |

| Structural stage | SE2                                                                  | SE3a                                                              | SE3b                                                              | SE4                                                               | SE5                                                               | SE6                                                               | SE7                                                               |
|------------------|----------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                           | Low shrub                                                         | Tall shrub                                                        | Pole sapling                                                      | Young forest                                                      | Mature forest                                                     | Old forest                                                        |
| Dominants        | sedges<br>sphagnum                                                   | sedges<br>sphagnum                                                | sedges<br>sphagnum                                                | sedges<br>sphagnum                                                | sedges<br>sphagnum                                                | sedges<br>sphagnum                                                | sedges<br>sphagnum                                                |
| Associates       | bluejoint<br>nagoonberry                                             | lodgepole pine<br>white hybrid spruce<br>bluejoint<br>nagoonberry | lodgepole pine<br>white hybrid spruce<br>bluejoint<br>nagoonberry | lodgepole pine<br>white hybrid spruce<br>bluejoint<br>nagoonberry | lodgepole pine<br>white hybrid spruce<br>bluejoint<br>nagoonberry | lodgepole pine<br>white hybrid spruce<br>bluejoint<br>nagoonberry | lodgepole pine<br>white hybrid spruce<br>bluejoint<br>nagoonberry |
| Comments         | Vegetation derived from the Kamloops Field Guide (Lloyd et al 1990). |                                                                   |                                                                   |                                                                   |                                                                   |                                                                   |                                                                   |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHvk1/03 HF HwCw – Falsebox - Feathermoss

| Map Unit                                                                                   | BEC/Site series # | Description                          | CB Code  |
|--------------------------------------------------------------------------------------------|-------------------|--------------------------------------|----------|
| <b>HF</b>                                                                                  | <b>ICHvk1/03</b>  | <b>HwCw – Falsebox - Feathermoss</b> | <b>5</b> |
| HF typically occurs on gentle to steep slopes. Subxeric to submesic soil moisture regimes. |                   |                                      |          |

| Structural stage | HF2                                                                          | HF3a                                                                                      | HF3b                                                                                         | HF4                                                                                          | HF5                                                                                                        | HF6                                                                                                        | HF7                                                                                                        |
|------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                                   | Low shrub                                                                                 | Tall shrub                                                                                   | Pole sapling                                                                                 | Young forest                                                                                               | Mature forest                                                                                              | Old forest                                                                                                 |
| Dominants        | fireweed<br>bracken<br>bunchberry<br>red-stemmed<br>feathermoss<br>step moss | false azalea<br>bunchberry<br>red-stemmed<br>feathermoss<br>step moss                     | western hemlock<br>western redcedar<br>bunchberry<br>red-stemmed<br>feathermoss<br>step moss | western hemlock<br>western redcedar<br>bunchberry<br>red-stemmed<br>feathermoss<br>step moss | western hemlock<br>western redcedar<br>bunchberry<br>red-stemmed<br>feathermoss<br>step moss               | western hemlock<br>western redcedar<br>bunchberry<br>red-stemmed<br>feathermoss<br>step moss               | western hemlock<br>western redcedar<br>bunchberry<br>red-stemmed<br>feathermoss<br>step moss               |
| Associates       | queen's cup<br>knight's plume                                                | western hemlock<br>western redcedar<br>black huckleberry<br>queen's cup<br>knight's plume | false azalea<br>black huckleberry<br>queen's cup<br>knight's plume                           | false azalea<br>black huckleberry<br>queen's cup<br>knight's plume                           | subalpine fir<br>hybrid white spruce<br>false azalea<br>black huckleberry<br>queen's cup<br>knight's plume | subalpine fir<br>hybrid white spruce<br>false azalea<br>black huckleberry<br>queen's cup<br>knight's plume | subalpine fir<br>hybrid white spruce<br>false azalea<br>black huckleberry<br>queen's cup<br>knight's plume |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992).       |                                                                                           |                                                                                              |                                                                                              |                                                                                                            |                                                                                                            |                                                                                                            |

# Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

## ICHvk1/04 HS CwHw – Oak fern – Spiny wood fern

| Map Unit                                                                                                            | BEC/Site series # | Description                              | CB Code  |
|---------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------|----------|
| <b>HS</b>                                                                                                           | <b>ICHvk1/04</b>  | <b>CwHw – Oak fern – Spiny wood fern</b> | <b>5</b> |
| HS typically occurs on significant slopes with deep, medium-textured soils. Submesic to mesic soil moisture regime. |                   |                                          |          |

| Structural stage | HS2                                                                                                | HS3a                                                                                                                                      | HS3b                                                                                                                                   | HS4                                                                                                                | HS5                                                                                                                | HS6                                                                                                                | HS7                                                                                                                |
|------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                                                         | Low shrub                                                                                                                                 | Tall shrub                                                                                                                             | Pole sapling                                                                                                       | Young forest                                                                                                       | Mature forest                                                                                                      | Old forest                                                                                                         |
| Dominants        | fireweed<br>bracken<br>oak fern<br>one-leaved<br>foamflower<br>spiny wood fern<br>pipecleaner moss | western redcedar<br>western hemlock<br>fireweed<br>bracken<br>oak fern<br>one-leaved<br>foamflower<br>spiny wood fern<br>pipecleaner moss | western redcedar<br>western hemlock<br>oak fern<br>one-leaved<br>foamflower<br>spiny wood fern<br>pipecleaner moss                     | western redcedar<br>western hemlock<br>oak fern<br>one-leaved<br>foamflower<br>spiny wood fern<br>pipecleaner moss | western redcedar<br>western hemlock<br>oak fern<br>one-leaved<br>foamflower<br>spiny wood fern<br>pipecleaner moss | western redcedar<br>western hemlock<br>oak fern<br>one-leaved<br>foamflower<br>spiny wood fern<br>pipecleaner moss | western redcedar<br>western hemlock<br>oak fern<br>one-leaved<br>foamflower<br>spiny wood fern<br>pipecleaner moss |
| Associates       | bunchberry<br>queen's cup<br>step moss<br>red-stemmed<br>feathermoss                               | western yew<br>oval-leaved<br>blueberry<br>bunchberry<br>queen's cup<br>step moss<br>red-stemmed<br>feathermoss                           | western yew<br>oval-leaved<br>blueberry<br>fireweed<br>bracken<br>bunchberry<br>queen's cup<br>step moss<br>red-stemmed<br>feathermoss | western yew<br>oval-leaved<br>blueberry<br>bunchberry<br>queen's cup<br>step moss<br>red-stemmed<br>feathermoss    | western yew<br>oval-leaved<br>blueberry<br>bunchberry<br>queen's cup<br>step moss<br>red-stemmed<br>feathermoss    | western yew<br>oval-leaved<br>blueberry<br>bunchberry<br>queen's cup<br>step moss<br>red-stemmed<br>feathermoss    | western yew<br>oval-leaved<br>blueberry<br>bunchberry<br>queen's cup<br>step moss<br>red-stemmed<br>feathermoss    |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992).                             |                                                                                                                                           |                                                                                                                                        |                                                                                                                    |                                                                                                                    |                                                                                                                    |                                                                                                                    |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHvk1/06 RC CwSxw – Skunk cabbage

| Map Unit                                                                                                                                                | BEC/Site series # | Description                  | CB Code      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------|--------------|
| <b>RC</b>                                                                                                                                               | <b>ICHvk1/06</b>  | <b>CwSxw – Skunk cabbage</b> | <b>5, 24</b> |
| RC typically occurs in level or depressional forested swamps with poorly drained deep, medium-textured soils. Hygric to subhydryc soil moisture regime. |                   |                              |              |

| Structural stage | RC2                                                                                | RC3a                                                                                          | RC3b                                                                                                      | RC4                                                                                                       | RC5                                                                                                       | RC6                                                                                                       | RC7                                                                                                       |
|------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                                         | Low shrub                                                                                     | Tall shrub                                                                                                | Pole sapling                                                                                              | Young forest                                                                                              | Mature forest                                                                                             | Old forest                                                                                                |
| Dominants        | lady fern<br>skunk cabbage<br>leafy mosses<br>sphagnum                             | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage<br>leafy mosses<br>sphagnum | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage<br>leafy mosses<br>sphagnum             | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage<br>leafy mosses<br>sphagnum             | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage<br>leafy mosses<br>sphagnum             | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage<br>leafy mosses<br>sphagnum             | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage<br>leafy mosses<br>sphagnum             |
| Associates       | bunchberry<br>enchanter's<br>nightshade<br>step moss<br>red-stemmed<br>feathermoss | bunchberry<br>enchanter's<br>nightshade<br>step moss<br>red-stemmed<br>feathermoss            | hybrid white spruce<br>bunchberry<br>enchanter's<br>nightshade<br>step moss<br>red-stemmed<br>feathermoss | hybrid white spruce<br>bunchberry<br>enchanter's<br>nightshade<br>step moss<br>red-stemmed<br>feathermoss | hybrid white spruce<br>bunchberry<br>enchanter's<br>nightshade<br>step moss<br>red-stemmed<br>feathermoss | hybrid white spruce<br>bunchberry<br>enchanter's<br>nightshade<br>step moss<br>red-stemmed<br>feathermoss | hybrid white spruce<br>bunchberry<br>enchanter's<br>nightshade<br>step moss<br>red-stemmed<br>feathermoss |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992).             |                                                                                               |                                                                                                           |                                                                                                           |                                                                                                           |                                                                                                           |                                                                                                           |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHvk1/01 RD CwHw – Devil's club – Lady fern

| Map Unit                                                                                                        | BEC/Site series # | Description                            | CB Code  |
|-----------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------|----------|
| <b>RD</b>                                                                                                       | <b>ICHvk1/01</b>  | <b>CwHw – Devil's club – Lady fern</b> | <b>5</b> |
| RD typically occurs on gentle slopes with deep, medium-textured soils. Mesic to subhygric soil moisture regime. |                   |                                        |          |

| Structural stage | RD2                                                                         | RD3a                                                                                                                            | RD3b                                                                                                                                                  | RD4                                                                                                                            | RD5                                                                                                                            | RD6                                                                                                                            | RD7                                                                                                                            |
|------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                                  | Low shrub                                                                                                                       | Tall shrub                                                                                                                                            | Pole sapling                                                                                                                   | Young forest                                                                                                                   | Mature forest                                                                                                                  | Old forest                                                                                                                     |
| Dominants        | fireweed<br>bracken<br>oak fern<br>one-leaved<br>foamflower<br>lady fern    | western redcedar<br>western hemlock<br>devil's club<br>fireweed<br>bracken<br>oak fern<br>one-leaved<br>foamflower<br>lady fern | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower<br>lady fern                                              | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower<br>lady fern                       | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower<br>lady fern                       | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower<br>lady fern                       | western redcedar<br>western hemlock<br>devil's club<br>oak fern<br>one-leaved<br>foamflower<br>lady fern                       |
| Associates       | bunchberry<br>enchanter's<br>nightshade<br>pipecleaner moss<br>leafy mosses | oval-leaved<br>blueberry<br>bunchberry<br>enchanter's<br>nightshade<br>pipecleaner moss<br>leafy mosses                         | hybrid white spruce<br>oval-leaved<br>blueberry<br>fireweed<br>bracken<br>bunchberry<br>enchanter's<br>nightshade<br>pipecleaner moss<br>leafy mosses | hybrid white spruce<br>oval-leaved<br>blueberry<br>bunchberry<br>enchanter's<br>nightshade<br>pipecleaner moss<br>leafy mosses | hybrid white spruce<br>oval-leaved<br>blueberry<br>bunchberry<br>enchanter's<br>nightshade<br>pipecleaner moss<br>leafy mosses | hybrid white spruce<br>oval-leaved<br>blueberry<br>bunchberry<br>enchanter's<br>nightshade<br>pipecleaner moss<br>leafy mosses | hybrid white spruce<br>oval-leaved<br>blueberry<br>bunchberry<br>enchanter's<br>nightshade<br>pipecleaner moss<br>leafy mosses |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992).      |                                                                                                                                 |                                                                                                                                                       |                                                                                                                                |                                                                                                                                |                                                                                                                                |                                                                                                                                |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHvk1/05 RH CwSxw - Devil's club - Horsetail

| Map Unit                                                                                                                        | BEC/Site series # | Description                             | CB Code      |
|---------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|--------------|
| <b>RH</b>                                                                                                                       | <b>ICHvk1/05</b>  | <b>CwSxw - Devil's club - Horsetail</b> | <b>5, 24</b> |
| RH typically occurs on level, moist receiving sites with deep, medium-textured soils. Subhygric to hygric soil moisture regime. |                   |                                         |              |

| Structural stage | RH2                                                                    | RH3a                                                                                                                      | RH3b                                                                                                                      | RH4                                                                                                                       | RH5                                                                                                                       | RH6                                                                                                                       | RH7                                                                                                                       |
|------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                             | Low shrub                                                                                                                 | Tall shrub                                                                                                                | Pole sapling                                                                                                              | Young forest                                                                                                              | Mature forest                                                                                                             | Old forest                                                                                                                |
| Dominants        | oak fern<br>common horsetail<br>leafy mosses<br>bent-leaf moss         | western redcedar<br>hybrid white spruce<br>devil's club<br>oak fern<br>common horsetail<br>leafy mosses<br>bent-leaf moss | western redcedar<br>hybrid white spruce<br>devil's club<br>oak fern<br>common horsetail<br>leafy mosses<br>bent-leaf moss | western redcedar<br>hybrid white spruce<br>devil's club<br>oak fern<br>common horsetail<br>leafy mosses<br>bent-leaf moss | western redcedar<br>hybrid white spruce<br>devil's club<br>oak fern<br>common horsetail<br>leafy mosses<br>bent-leaf moss | western redcedar<br>hybrid white spruce<br>devil's club<br>oak fern<br>common horsetail<br>leafy mosses<br>bent-leaf moss | western redcedar<br>hybrid white spruce<br>devil's club<br>oak fern<br>common horsetail<br>leafy mosses<br>bent-leaf moss |
| Associates       | lady fern<br>red-stemmed<br>feathermoss                                | oval-leaved<br>blueberry<br>red-osier dogwood<br>lady fern<br>red-stemmed<br>feathermoss                                  | oval-leaved<br>blueberry<br>red-osier dogwood<br>lady fern<br>red-stemmed<br>feathermoss                                  | oval-leaved<br>blueberry<br>red-osier dogwood<br>lady fern<br>red-stemmed<br>feathermoss                                  | oval-leaved<br>blueberry<br>red-osier dogwood<br>lady fern<br>red-stemmed<br>feathermoss                                  | oval-leaved<br>blueberry<br>red-osier dogwood<br>lady fern<br>red-stemmed<br>feathermoss                                  | oval-leaved<br>blueberry<br>red-osier dogwood<br>lady fern<br>red-stemmed<br>feathermoss                                  |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                           |                                                                                                                           |                                                                                                                           |                                                                                                                           |                                                                                                                           |                                                                                                                           |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHwk1/07 CD Act – Dogwood - Twinberry

| Map Unit                                                                                                                                | BEC/Site series # | Description                      | CB Code      |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------|--------------|
| <b>CD</b>                                                                                                                               | <b>ICHwk1/07</b>  | <b>Act – Dogwood - Twinberry</b> | <b>5, 24</b> |
| CD typically occurs on active floodplains to medium benches with deep, coarse-textured soils. Subhygric to hygric soil moisture regime. |                   |                                  |              |

| Structural stage | CD2                                                                    | CD3a                                                                       | CD3b                                                                                          | CD4                                                                             | CD5                                                                             | CD6                                                                             | CD7                                                                             |
|------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                             | Low shrub                                                                  | Tall shrub                                                                                    | Pole sapling                                                                    | Young forest                                                                    | Mature forest                                                                   | Old forest                                                                      |
| Dominants        | fireweed                                                               | black cottonwood<br>mountain alder<br>red-osier dogwood<br>black twinberry | black cottonwood<br>mountain alder<br>red-osier dogwood<br>black twinberry                    | hybrid white spruce<br>black cottonwood<br>red-osier dogwood<br>black twinberry | hybrid white spruce<br>black cottonwood<br>red-osier dogwood<br>black twinberry | hybrid white spruce<br>black cottonwood<br>red-osier dogwood<br>black twinberry | hybrid white spruce<br>black cottonwood<br>red-osier dogwood<br>black twinberry |
| Associates       | queen's cup<br>trailing raspberry                                      | paper birch<br>highbush cranberry<br>queen's cup<br>trailing raspberry     | hybrid white spruce<br>paper birch<br>highbush cranberry<br>queen's cup<br>trailing raspberry | paper birch<br>highbush cranberry<br>queen's cup<br>trailing raspberry          | paper birch<br>highbush cranberry<br>queen's cup<br>trailing raspberry          | paper birch<br>highbush cranberry<br>queen's cup<br>trailing raspberry          | paper birch<br>highbush cranberry<br>queen's cup<br>trailing raspberry          |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992). |                                                                            |                                                                                               |                                                                                 |                                                                                 |                                                                                 |                                                                                 |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHwk1/04 HF HwCw – Falsebox - Feathermoss

| Map Unit                                                                                                              | BEC/Site series # | Description                          | CB Code  |
|-----------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------|----------|
| <b>HF</b>                                                                                                             | <b>ICHwk1/04</b>  | <b>HwCw – Falsebox - Feathermoss</b> | <b>5</b> |
| HF typically occurs on significant slopes with deep, medium-textured soils. Subhygric to hygric soil moisture regime. |                   |                                      |          |

| Structural stage | HF2                                                                    | HF3a                                                                                                                              | HF3b                                                                                                                              | HF4                                                                                                            | HF5                                                                                                            | HF6                                                                                                            | HF7                                                                                                            |
|------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                             | Low shrub                                                                                                                         | Tall shrub                                                                                                                        | Pole sapling                                                                                                   | Young forest                                                                                                   | Mature forest                                                                                                  | Old forest                                                                                                     |
| Dominants        | fireweed<br>bracken                                                    | western redcedar<br>western hemlock<br>falsebox<br>fireweed<br>bracken                                                            | western redcedar<br>western hemlock<br>falsebox<br>fireweed<br>bracken                                                            | western redcedar<br>western hemlock<br>falsebox<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>falsebox<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>falsebox<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>falsebox<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss |
| Associates       | queen's cup<br>one-leaved<br>foamflower                                | Douglas-fir<br>twinflor<br>queen's cup<br>one-leaved<br>foamflower<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | Douglas-fir<br>twinflor<br>queen's cup<br>one-leaved<br>foamflower<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | Douglas-fir<br>twinflor<br>queen's cup<br>one-leaved<br>foamflower                                             | Douglas-fir<br>twinflor<br>queen's cup<br>one-leaved<br>foamflower                                             | Douglas-fir<br>twinflor<br>queen's cup<br>one-leaved<br>foamflower                                             | Douglas-fir<br>twinflor<br>queen's cup<br>one-leaved<br>foamflower                                             |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                                   |                                                                                                                                   |                                                                                                                |                                                                                                                |                                                                                                                |                                                                                                                |

# Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

## ICHwk1/01 HO CwHw – Oak fern

| Map Unit                                                                                           | BEC/Site series # | Description            | CB Code  |
|----------------------------------------------------------------------------------------------------|-------------------|------------------------|----------|
| <b>HO</b>                                                                                          | <b>ICHwk1/01</b>  | <b>CwHw – Oak fern</b> | <b>5</b> |
| HO typically occurs on gentle slopes with deep, medium-textured soils. Mesic soil moisture regime. |                   |                        |          |

| Structural stage | HO2                                                                        | HO3a                                                                                                              | HO3b                                                                                                                                     | HO4                                                                                                                                                       | HO5                                                                                                                                                       | HO6                                                                                                                                                       | HO7                                                                                                                                                       |
|------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                                 | Low shrub                                                                                                         | Tall shrub                                                                                                                               | Pole sapling                                                                                                                                              | Young forest                                                                                                                                              | Mature forest                                                                                                                                             | Old forest                                                                                                                                                |
| Dominants        | fireweed<br>bracken<br>queen's cup<br>one-leaved<br>foamflower<br>oak fern | western redcedar<br>western hemlock<br>fireweed<br>bracken<br>queen's cup<br>one-leaved<br>foamflower<br>oak fern | western redcedar<br>western hemlock<br>queen's cup<br>one-leaved<br>foamflower<br>oak fern<br>fireweed<br>bracken                        | western redcedar<br>western hemlock<br>queen's cup<br>one-leaved<br>foamflower<br>oak fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>queen's cup<br>one-leaved<br>foamflower<br>oak fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>queen's cup<br>one-leaved<br>foamflower<br>oak fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | western redcedar<br>western hemlock<br>queen's cup<br>one-leaved<br>foamflower<br>oak fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss |
| Associates       | rosy twistedstalk<br>leafy mosses                                          | falsebox<br>oval-leaved<br>blueberry<br>rosy twistedstalk<br>leafy mosses                                         | falsebox<br>oval-leaved<br>blueberry<br>rosy twistedstalk<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss<br>leafy mosses | falsebox<br>oval-leaved<br>blueberry<br>rosy twistedstalk<br>leafy mosses                                                                                 | falsebox<br>oval-leaved<br>blueberry<br>rosy twistedstalk<br>leafy mosses                                                                                 | falsebox<br>oval-leaved<br>blueberry<br>rosy twistedstalk<br>leafy mosses                                                                                 | falsebox<br>oval-leaved<br>blueberry<br>rosy twistedstalk<br>leafy mosses                                                                                 |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992).     |                                                                                                                   |                                                                                                                                          |                                                                                                                                                           |                                                                                                                                                           |                                                                                                                                                           |                                                                                                                                                           |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHwk1/08 RC CwSxw – Skunk cabbage

| Map Unit                                                                                                                                                | BEC/Site series # | Description                  | CB Code   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------|-----------|
| <b>RC</b>                                                                                                                                               | <b>ICHwk1/08</b>  | <b>CwSxw – Skunk cabbage</b> | <b>24</b> |
| RC typically occurs in level or depressional forested swamps with poorly drained deep, medium-textured soils. Hygric to subhydryc soil moisture regime. |                   |                              |           |

| Structural stage | RC2                                                                    | RC3a                                                                                       | RC3b                                                                                       | RC4                                                                                                                                | RC5                                                                                                                                | RC6                                                                                                                                | RC7                                                                                                                                |
|------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                             | Low shrub                                                                                  | Tall shrub                                                                                 | Pole sapling                                                                                                                       | Young forest                                                                                                                       | Mature forest                                                                                                                      | Old forest                                                                                                                         |
| Dominants        | lady fern<br>skunk cabbage                                             | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage                          | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage                          | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage                                                                  | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage                                                                  | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage                                                                  | western redcedar<br>western hemlock<br>lady fern<br>skunk cabbage                                                                  |
| Associates       | common horsetail<br>red-stemmed<br>feathermoss<br>leafy mosses         | oval-leaved<br>blueberry<br>common horsetail<br>red-stemmed<br>feathermoss<br>leafy mosses | oval-leaved<br>blueberry<br>common horsetail<br>red-stemmed<br>feathermoss<br>leafy mosses | hybrid white spruce<br>subalpine fir<br>oval-leaved<br>blueberry<br>common horsetail<br>red-stemmed<br>feathermoss<br>leafy mosses | hybrid white spruce<br>subalpine fir<br>oval-leaved<br>blueberry<br>common horsetail<br>red-stemmed<br>feathermoss<br>leafy mosses | hybrid white spruce<br>subalpine fir<br>oval-leaved<br>blueberry<br>common horsetail<br>red-stemmed<br>feathermoss<br>leafy mosses | hybrid white spruce<br>subalpine fir<br>oval-leaved<br>blueberry<br>common horsetail<br>red-stemmed<br>feathermoss<br>leafy mosses |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                            |                                                                                            |                                                                                                                                    |                                                                                                                                    |                                                                                                                                    |                                                                                                                                    |

# Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

## ICHwk1/05 RD CwHw – Devil's club – Lady fern

| Map Unit                                                                                                                       | BEC/Site series # | Description                            | CB Code  |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------|----------|
| <b>RD</b>                                                                                                                      | <b>ICHwk1/05</b>  | <b>CwHw – Devil's club – Lady fern</b> | <b>5</b> |
| RD typically occurs on level, moist receiving sites with deep, medium-textured soils. Mesic to subhygric soil moisture regime. |                   |                                        |          |

| Structural stage | RD2                                                                                                                | RD3a                                                                                                                                            | RD3b                                                                                                                                                                  | RD4                                                                                                                                            | RD5                                                                                                                                            | RD6                                                                                                                                            | RD7                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                                                                         | Low shrub                                                                                                                                       | Tall shrub                                                                                                                                                            | Pole sapling                                                                                                                                   | Young forest                                                                                                                                   | Mature forest                                                                                                                                  | Old forest                                                                                                                                     |
| Dominants        | fireweed<br>bracken<br>one-leaved<br>foamflower<br>oak fern<br>lady fern<br>leafy mosses                           | western redcedar<br>western hemlock<br>devil's club<br>fireweed<br>bracken<br>one-leaved<br>foamflower<br>oak fern<br>lady fern<br>leafy mosses | western redcedar<br>western hemlock<br>devil's club<br>one-leaved<br>foamflower<br>oak fern<br>lady fern<br>leafy mosses                                              | western redcedar<br>western hemlock<br>devil's club<br>one-leaved<br>foamflower<br>oak fern<br>lady fern<br>leafy mosses                       | western redcedar<br>western hemlock<br>devil's club<br>one-leaved<br>foamflower<br>oak fern<br>lady fern<br>leafy mosses                       | western redcedar<br>western hemlock<br>devil's club<br>one-leaved<br>foamflower<br>oak fern<br>lady fern<br>leafy mosses                       | western redcedar<br>western hemlock<br>devil's club<br>one-leaved<br>foamflower<br>oak fern<br>lady fern<br>leafy mosses                       |
| Associates       | queen's cup<br>rosy twistedstalk<br>spiny wood fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | oval-leaved<br>blueberry<br>queen's cup<br>rosy twistedstalk<br>spiny wood fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss  | oval-leaved<br>blueberry<br>fireweed<br>bracken<br>queen's cup<br>rosy twistedstalk<br>spiny wood fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | oval-leaved<br>blueberry<br>queen's cup<br>rosy twistedstalk<br>spiny wood fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | oval-leaved<br>blueberry<br>queen's cup<br>rosy twistedstalk<br>spiny wood fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | oval-leaved<br>blueberry<br>queen's cup<br>rosy twistedstalk<br>spiny wood fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss | oval-leaved<br>blueberry<br>queen's cup<br>rosy twistedstalk<br>spiny wood fern<br>step moss<br>pipecleaner moss<br>red-stemmed<br>feathermoss |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992).                                             |                                                                                                                                                 |                                                                                                                                                                       |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHwk1/06 RH CwSxw – Devil's club - Horsetail

| Map Unit                                                                                                                              | BEC/Site series # | Description                             | CB Code  |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|----------|
| <b>RH</b>                                                                                                                             | <b>ICHwk1/06</b>  | <b>CwSxw – Devil's club - Horsetail</b> | <b>5</b> |
| RH typically occurs on active floodplains to high benches with deep, coarse-textured soils. Subhygric to hygric soil moisture regime. |                   |                                         |          |

| Structural stage | RH2                                                                    | RH3a                                                                                                                                                                 | RH3b                                                                                                                                                                                                         | RH4                                                                                                                                                                                   | RH5                                                                                                                                                                                   | RH6                                                                                                                                                                                   | RH7                                                                                                                                                                                   |
|------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                             | Low shrub                                                                                                                                                            | Tall shrub                                                                                                                                                                                                   | Pole sapling                                                                                                                                                                          | Young forest                                                                                                                                                                          | Mature forest                                                                                                                                                                         | Old forest                                                                                                                                                                            |
| Dominants        | oak fern<br>lady fern                                                  | western redcedar<br>western hemlock<br>thimbleberry                                                                                                                  | western redcedar<br>western hemlock<br>thimbleberry                                                                                                                                                          | western redcedar<br>western hemlock<br>hybrid white spruce<br>thimbleberry                                                                                                            | western redcedar<br>western hemlock<br>hybrid white spruce<br>thimbleberry                                                                                                            | western redcedar<br>western hemlock<br>hybrid white spruce<br>thimbleberry                                                                                                            | western redcedar<br>western hemlock<br>hybrid white spruce<br>thimbleberry                                                                                                            |
| Associates       | common horsetail<br>leafy mosses                                       | black cottonwood<br>oval-leaved<br>blueberry<br>devil's club<br>red-osier dogwood<br>highbush cranberry<br>oak fern<br>lady fern<br>common horsetail<br>leafy mosses | hybrid white spruce<br>subalpine fir<br>black cottonwood<br>oval-leaved<br>blueberry<br>devil's club<br>red-osier dogwood<br>highbush cranberry<br>oak fern<br>lady fern<br>common horsetail<br>leafy mosses | subalpine fir<br>black cottonwood<br>oval-leaved<br>blueberry<br>devil's club<br>red-osier dogwood<br>highbush cranberry<br>oak fern<br>lady fern<br>common horsetail<br>leafy mosses | subalpine fir<br>black cottonwood<br>oval-leaved<br>blueberry<br>devil's club<br>red-osier dogwood<br>highbush cranberry<br>oak fern<br>lady fern<br>common horsetail<br>leafy mosses | subalpine fir<br>black cottonwood<br>oval-leaved<br>blueberry<br>devil's club<br>red-osier dogwood<br>highbush cranberry<br>oak fern<br>lady fern<br>common horsetail<br>leafy mosses | subalpine fir<br>black cottonwood<br>oval-leaved<br>blueberry<br>devil's club<br>red-osier dogwood<br>highbush cranberry<br>oak fern<br>lady fern<br>common horsetail<br>leafy mosses |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                                                                      |                                                                                                                                                                                                              |                                                                                                                                                                                       |                                                                                                                                                                                       |                                                                                                                                                                                       |                                                                                                                                                                                       |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHwk1/02 RL Rhacomitrium - Cladonia

| Map Unit                                                                                                                                | BEC/Site series # | Description                    | CB Code      |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------|--------------|
| <b>RL</b>                                                                                                                               | <b>ICHwk1/02</b>  | <b>Rhacomitrium - Cladonia</b> | <b>5, 98</b> |
| RL typically occurs on a significant, warm aspect slopes with shallow, medium-textured soils. Very xeric to xeric soil moisture regime. |                   |                                |              |

| Structural stage | RL2                                                                    | RL3a                                               | RL3b                                               | RL4                                                | RL5                                                | RL6                                                | RL7                                                |
|------------------|------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| Plant species    | Grass-Forb                                                             | Low shrub                                          | Tall shrub                                         | Pole sapling                                       | Young forest                                       | Mature forest                                      | Old forest                                         |
| Dominants        | rock mosses<br><i>cladonias</i><br><i>cladinas</i>                     | rock mosses<br><i>cladonias</i><br><i>cladinas</i> | rock mosses<br><i>cladonias</i><br><i>cladinas</i> | rock mosses<br><i>cladonias</i><br><i>cladinas</i> | rock mosses<br><i>cladonias</i><br><i>cladinas</i> | rock mosses<br><i>cladonias</i><br><i>cladinas</i> | rock mosses<br><i>cladonias</i><br><i>cladinas</i> |
| Associates       | parsley fern                                                           | paper birch<br>red raspberry<br>parsley fern       | paper birch<br>red raspberry<br>parsley fern       | paper birch<br>red raspberry<br>parsley fern       | paper birch<br>red raspberry<br>parsley fern       | paper birch<br>red raspberry<br>parsley fern       | paper birch<br>red raspberry<br>parsley fern       |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992). |                                                    |                                                    |                                                    |                                                    |                                                    |                                                    |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHwk1/09 SS Sedge - Sphagnum

| Map Unit                                                                  | BEC/Site series # | Description             | CB Code   |
|---------------------------------------------------------------------------|-------------------|-------------------------|-----------|
| <b>SS</b>                                                                 | <b>ICHwk1/09</b>  | <b>Sedge - Sphagnum</b> | <b>22</b> |
| SS typically occurs on organic wetlands with a subhydric moisture regime. |                   |                         |           |

| Structural stage | SS2                                                                    | SS3a                                              | SS3b                                              | SS4                                               | SS5                                               | SS6                                               | SS7                                               |
|------------------|------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|
| Plant species    | Grass-Forb                                                             | Low shrub                                         | Tall shrub                                        | Pole sapling                                      | Young forest                                      | Mature forest                                     | Old forest                                        |
| Dominants        | dwarf nagoonberry<br>sedges<br>sphagnum                                | dwarf nagoonberry<br>sedges<br>sphagnum           | dwarf nagoonberry<br>sedges<br>sphagnum           | dwarf nagoonberry<br>sedges<br>sphagnum           | dwarf nagoonberry<br>sedges<br>sphagnum           | dwarf nagoonberry<br>sedges<br>sphagnum           | dwarf nagoonberry<br>sedges<br>sphagnum           |
| Associates       | red-stemmed<br>feathermoss                                             | hybrid white spruce<br>red-stemmed<br>feathermoss | hybrid white spruce<br>red-stemmed<br>feathermoss | hybrid white spruce<br>red-stemmed<br>feathermoss | hybrid white spruce<br>red-stemmed<br>feathermoss | hybrid white spruce<br>red-stemmed<br>feathermoss | hybrid white spruce<br>red-stemmed<br>feathermoss |
| Comments         | Vegetation derived the Nelson Field Guide (Braumandl and Curran 1992). |                                                   |                                                   |                                                   |                                                   |                                                   |                                                   |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHxw/02 DN FdPy - Mallow ninebark - Bluebunch wheatgrass

| Map Unit                                                                                                                                                                                                                 | BEC/Site series # | Description                                          | CB Code  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------|----------|
| <b>DN</b>                                                                                                                                                                                                                | <b>ICHxw/02</b>   | <b>FdPy - Mallow ninebark - Bluebunch wheatgrass</b> | <b>5</b> |
| DN typically occurs on shallow soils and steep warm aspects. Soil textures are generally medium to coarse with subxeric moisture regimes. Most of this unit is in early seral communities due to the frequency of fires. |                   |                                                      |          |

| Structural stage | DN2                                                                                                      | DN3a                                                                                                                                         | DN3b                                                                                                                                                     | DN4                                                                                                                                                 | DN5                                                                                                                                                 | DN6                                                                                                                                           | DN7                                                                                                                              |
|------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                                                               | Low shrub                                                                                                                                    | Tall shrub                                                                                                                                               | Pole sapling                                                                                                                                        | Young forest                                                                                                                                        | Mature forest                                                                                                                                 | Old forest                                                                                                                       |
| Dominants        | open sites of:<br>fireweed<br>bracken                                                                    | shrubby sites of:<br>saskatoon<br>tall Oregon-grape<br>mallow ninebark<br>snowbrush<br>bluebunch<br>wheatgrass                               | shrubby sites of:<br>Douglas-fir<br>saskatoon<br>tall Oregon-grape<br>mallow ninebark<br>snowbrush                                                       | dense stands of:<br>Douglas-fir<br>ponderosa pine<br>tall Oregon-grape<br>mallow ninebark<br>snowbrush                                              | open stands of:<br>Douglas-fir<br>ponderosa pine<br>tall Oregon-grape<br>mallow ninebark<br>snowbrush                                               | open stands of:<br>Douglas-fir<br>ponderosa pine<br>tall Oregon-grape<br>mallow ninebark                                                      | open stands of:<br>Douglas-fir<br>ponderosa pine<br>tall Oregon-grape<br>mallow ninebark                                         |
| Associates       | white-flowered<br>hawkweed<br>bluebunch<br>wheatgrass                                                    | Douglas-fir<br>ponderosa pine<br>trembling aspen<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>stiff needlegrass | Ponderosa pine<br>trembling aspen<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>stiff needlegrass<br>bluebunch<br>wheatgrass | trembling aspen<br>saskatoon<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>stiff needlegrass<br>bluebunch<br>wheatgrass | saskatoon<br>trembling aspen<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>stiff needlegrass<br>bluebunch<br>wheatgrass | saskatoon<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>stiff needlegrass<br>snowbrush<br>bluebunch<br>wheatgrass | saskatoon<br>bitter cherry<br>ocean spray<br>kinnikinnick<br>birch-leaved spirea<br>stiff needlegrass<br>bluebunch<br>wheatgrass |
| Comments         | Vegetation derived from Biophysical Ecosystem Legend –Wilson/Stagleap South Slopes (Marcoux et al 1996). |                                                                                                                                              |                                                                                                                                                          |                                                                                                                                                     |                                                                                                                                                     |                                                                                                                                               |                                                                                                                                  |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHxw/03 DO FdPy - Oregon grape - Birch-leaved spirea

| Map Unit                                                                                                                                                                                                                                                                                                                    | BEC/Site series # | Description                                      | CB Code  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------|----------|
| <b>DO</b>                                                                                                                                                                                                                                                                                                                   | <b>ICHxw/03</b>   | <b>FdPy - Oregon grape - Birch-leaved spirea</b> | <b>5</b> |
| DO typically occurs on deep soil morainal and colluvial parent materials with moderate to steeply sloping warm aspects. Soil moisture regimes are generally submesic. Moderately thick mor (moder) humus forms occur most frequently. This unit differs from the DN ecosystem unit by the presence of a closed FdPy canopy. |                   |                                                  |          |

| Structural stage | DO2                                                                                                      | DO3a                                                                                                                                             | DO3b                                                                                                                                          | DO4                                                                                                                                                         | DO5                                                                                                                                                            | DO6                                                                                                                                 | DO7                                                                                                                                 |
|------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                                                               | Low shrub                                                                                                                                        | Tall shrub                                                                                                                                    | Pole sapling                                                                                                                                                | Young forest                                                                                                                                                   | Mature forest                                                                                                                       | Old forest                                                                                                                          |
| Dominants        | open sites of:<br>fireweed                                                                               | shrubby sites of:<br>ocean spray<br>hazelnut<br>common snowberry                                                                                 | shrubby sites of:<br>ocean spray<br>hazelnut<br>common snowberry<br>paper birch                                                               | dense forests of:<br>Douglas-fir<br>ponderosa pine<br>paper birch                                                                                           | open stands of:<br>Douglas-fir<br>ponderosa pine                                                                                                               | open stands of:<br>Douglas-fir<br>ponderosa pine                                                                                    | open stands of:<br>Douglas-fir<br>ponderosa pine                                                                                    |
| Associates       | thimbleberry<br>tall Oregon-grape<br>knapweed                                                            | snowbrush<br>Douglas-fir<br>ponderosa pine<br>saskatoon<br>bitter cherry<br>thimbleberry<br>tall Oregon-grape<br>birch-leaved spirea<br>knapweed | snowbrush<br>Douglas-fir<br>ponderosa pine<br>saskatoon<br>bitter cherry<br>tall Oregon-grape<br>birch-leaved spirea<br>pinegrass<br>knapweed | saskatoon<br>snowbrush<br>ocean-spray<br>tall Oregon-grape<br>bitter cherry<br>common snowberry<br>hazelnut<br>birch-leaved spirea<br>pinegrass<br>knapweed | paper birch<br>snowbrush<br>saskatoon<br>ocean-spray<br>tall Oregon-grape<br>bitter cherry<br>common snowberry<br>hazelnut<br>birch-leaved spirea<br>pinegrass | saskatoon<br>snowbrush<br>ocean-spray<br>tall Oregon-grape<br>bitter cherry<br>common snowberry<br>birch-leaved spirea<br>pinegrass | saskatoon<br>snowbrush<br>ocean-spray<br>tall Oregon-grape<br>bitter cherry<br>common snowberry<br>birch-leaved spirea<br>pinegrass |
| Comments         | Vegetation derived from Biophysical Ecosystem Legend –Wilson/Stagleap South Slopes (Marcoux et al 1996). |                                                                                                                                                  |                                                                                                                                               |                                                                                                                                                             |                                                                                                                                                                |                                                                                                                                     |                                                                                                                                     |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHxw/01 DP DP Fd - Prince's pine

| Map Unit                                                                                                                                                                         | BEC/Site series # | Description                  | CB Code  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------|----------|
| <b>DP</b>                                                                                                                                                                        | <b>ICHxw/01</b>   | <b>DP Fd - Prince's pine</b> | <b>5</b> |
| DP typically occurs on deep, medium-textured morainal blankets with gentle slopes. Moderately thick (3 cm) mor humus forms occur most frequently. Soil moisture regime is mesic. |                   |                              |          |

| Structural stage | DP2                                                                                                      | DP3a                                                                                      | DP3b                                                                                                   | DP4                                                                                  | DP5                                                                                                                         | DP6                                                                        | DP7                                                                    |
|------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------|
| Plant species    | Grass-Forb                                                                                               | Low shrub                                                                                 | Tall shrub                                                                                             | Pole sapling                                                                         | Young forest                                                                                                                | Mature forest                                                              | Old forest                                                             |
| Dominants        | open sites of :<br>fireweed                                                                              | shrubby sites of:<br>lodgepole pine<br>Sitka alder<br>paper birch                         | shrubby sites of:<br>lodgepole pine<br>Sitka alder<br>paper birch                                      | dense stands of:<br>lodgepole pine                                                   | young stands of:<br>lodgepole pine                                                                                          | closed stands of:<br>western redcedar<br>western hemlock<br>lodgepole pine | closed stands of:<br>western redcedar<br>western hemlock               |
| Associates       | falsebox<br>thimbleberry<br>Sitka alder                                                                  | western larch<br>Douglas-maple<br>falsebox<br>thimbleberry<br>prince's pine<br>twinflower | grand fir<br>western larch<br>Douglas-maple<br>falsebox<br>thimbleberry<br>prince's pine<br>twinflower | paper birch<br>grand fir<br>western larch<br>falsebox<br>prince's pine<br>twinflower | western redcedar<br>western hemlock<br>paper birch<br>grand fir<br>western larch<br>falsebox<br>prince's pine<br>twinflower | grand fir<br>falsebox<br>prince's pine<br>twinflower                       | lodgepole pine<br>grand fir<br>falsebox<br>prince's pine<br>twinflower |
| Comments         | Vegetation derived from Biophysical Ecosystem Legend –Wilson/Stagleap South Slopes (Marcoux et al 1996). |                                                                                           |                                                                                                        |                                                                                      |                                                                                                                             |                                                                            |                                                                        |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### ICHxw/05 HS CwHw - Prince's pine - Wild sarsaparilla

| Map Unit                                                                                                                                                                                                                                                          | BEC/Site series # | Description                                     | CB Code  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------|----------|
| <b>HS</b>                                                                                                                                                                                                                                                         | <b>ICHxw/05</b>   | <b>CwHw - Prince's pine - Wild sarsaparilla</b> | <b>5</b> |
| HS typically occurs on gently sloping, deep soil morainal and glaciofluvial parent materials in receiving sites. These sites have deep, medium-textured soils with mesic to subhygric moisture regimes. Thick (3-10 cm) mor (moder) humus forms occur frequently. |                   |                                                 |          |

| Map Symbol    | HS2                                                                                                      | HS3a                                                                                                                       | HS3b                                                                                                           | HS4                                                                                                  | HS5                                                                                                                               | HS6                                                                                                                                                 | HS7                                                                                |
|---------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                               | Low shrub                                                                                                                  | Tall shrub                                                                                                     | Pole sapling                                                                                         | Young forest                                                                                                                      | Mature forest                                                                                                                                       | Old forest                                                                         |
| Dominants     | open sites of:<br>fireweed                                                                               | shrubby sites of:<br>Douglas maple<br>prince's pine                                                                        | shrubby sites of:<br>Douglas maple<br>prince's pine<br>paper birch                                             | dense stands of:<br>lodgepole pine<br>western larch<br>Douglas maple<br>prince's pine<br>paper birch | young stands of:<br>lodgepole pine<br>western larch<br>Douglas maple<br>prince's pine                                             | closed stands of:<br>western redcedar<br>western hemlock<br>prince's pine                                                                           | closed stands of:<br>western redcedar<br>western hemlock<br>prince's pine          |
| Associates    | thimbleberry<br>western meadowrue<br>pathfinder<br>clasping<br>twistedstalk                              | lodgepole pine<br>western larch<br>thimbleberry<br>clasping<br>twistedstalk<br>pathfinder<br>western meadowrue<br>fireweed | lodgepole pine<br>western larch<br>thimbleberry<br>clasping<br>twistedstalk<br>pathfinder<br>western meadowrue | thimbleberry<br>clasping<br>twistedstalk<br>pathfinder<br>western meadowrue                          | paper birch<br>western redcedar<br>western hemlock<br>thimbleberry<br>clasping<br>twistedstalk<br>pathfinder<br>western meadowrue | lodgepole pine<br>western larch<br>Douglas maple<br>thimbleberry<br>clasping<br>twistedstalk<br>pathfinder<br>western meadowrue<br>pipecleaner moss | clasping<br>twistedstalk<br>pathfinder<br>western<br>meadowrue<br>pipecleaner moss |
| Comments      | Vegetation derived from Biophysical Ecosystem Legend –Wilson/Stagleap South Slopes (Marcoux et al 1996). |                                                                                                                            |                                                                                                                |                                                                                                      |                                                                                                                                   |                                                                                                                                                     |                                                                                    |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFdm2 /02 AW Antelope-brush – Bluebunch wheatgrass

| Map Unit                                                                                                                                                                                                                                                                                                                                           | BEC/Site series # | Description                                  | CB Code      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------|--------------|
| <b>AW</b>                                                                                                                                                                                                                                                                                                                                          | <b>IDFdm2 /02</b> | <b>Antelope-brush – Bluebunch wheatgrass</b> | <b>5, 16</b> |
| AW typically occurs on level to gently sloping areas on coarse-textured morainal and glaciofluvial parent materials with subxeric to submesic soil moisture and submesotrophic to mesotrophic nutrient regimes. Coarse fragment content is high, soil texture is silt to silt loam with mull or moder humus forms and brunisolic soil development. |                   |                                              |              |

| Map Symbol    | AW2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | AW3a, AW3b                                                                                                                     | AW4                                                                                                                                                      | AW5                                                                                                                                                      | AW6                                                                                                                            | AW7                                                                                                                                                                      |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Shrub/Herb                                                                                                                     | Pole sapling                                                                                                                                             | Young forest                                                                                                                                             | Mature forest                                                                                                                  | Old forest                                                                                                                                                               |
| Dominants     | grassland of: <sup>1</sup><br>bluebunch wheatgrass<br>lichen                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | grassland of:<br>bluebunch wheatgrass                                                                                          | clumpy stands of:<br>lodgepole pine<br>Douglas-fir<br>bluebunch wheatgrass                                                                               | open forests of:<br>lodgepole pine<br>Douglas-fir<br>bluebunch wheatgrass                                                                                | open forests of:<br>Douglas-fir<br>bluebunch wheatgrass                                                                        | open forests of:<br>Douglas-fir<br>bluebunch wheatgrass<br><i>Cladonia</i> lichen<br><i>Cetraria</i> lichen                                                              |
| Associates    | saskatoon<br>antelope-brush<br>pasture sage<br>Kentucky bluegrass<br>yellow salsify<br>dogbane<br>nodding dogbane                                                                                                                                                                                                                                                                                                                                                                                                                  | Douglas-fir<br>rabbit-brush<br>saskatoon<br>common juniper<br>antelope-brush<br>dogbane<br>Kentucky bluegrass<br>nodding onion | ponderosa pine<br>rabbit-brush<br>saskatoon<br>common juniper<br>Rocky Mountain juniper<br>dogbane<br>rough fescue<br>Rocky Mountain fescue<br>junegrass | ponderosa pine<br>rabbit-brush<br>saskatoon<br>common juniper<br>Rocky Mountain juniper<br>dogbane<br>rough fescue<br>Rocky Mountain fescue<br>junegrass | ponderosa pine<br>rabbit-brush<br>saskatoon<br>common juniper<br>dogbane<br>rough fescue<br>Rocky-Mountain fescue<br>junegrass | ponderosa pine<br>Rocky Mountain juniper<br>common juniper<br>snowberry<br>saskatoon<br>dogbane<br>rough fescue<br>pinegrass<br>nodding onion<br><i>Peltigera</i> lichen |
| Comments      | Vegetation derived from plot data from Expanded Ecosystem Legend for Stoddart Creek Study Area (Marcoux et al 1997) and from the Nelson Field Guide (Braumandl and Curran 1992).<br>1 This structural stage is also used to describe the occurrence of edaphic grassland communities within the IDF dm2.<br>Open stands maintained by wildfire and ungulate grazing.<br>Sites with shallow and very shallow soils will have very open forest cover (>15%). Shrubby structural stages may well exceed the age class for old forest. |                                                                                                                                |                                                                                                                                                          |                                                                                                                                                          |                                                                                                                                |                                                                                                                                                                          |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFdm2 /06 BH Scrub birch – Horsetail

| Map Unit                                                                                                    | BEC/Site series # | Description                    | CB Code       |
|-------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------|---------------|
| <b>BH</b>                                                                                                   | <b>IDFdm2 /06</b> | <b>Scrub birch - Horsetail</b> | <b>22, 24</b> |
| BH typically occurs on a mineral wetland with calcareous seepage. Hygric to subhygric soil moisture regime. |                   |                                |               |

| Map Symbol    | BH2                                                                                                                                                                              | BH3a, BH3b                                                                         | BH4                                                           | BH5                                                                                  | BH6                                                                                  | BH7                                                                                  |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                       | Shrub/Herb                                                                         | Pole sapling                                                  | Young forest                                                                         | Mature forest                                                                        | Old forest                                                                           |
| Dominants     | water sedge<br>marsh horsetail                                                                                                                                                   | Shrubby sites of:<br>scrub birch<br>shrubby cinquefoil<br>water sedge<br>horsetail | scrub birch<br>shrubby cinquefoil<br>water sedge<br>horsetail | hybrid white spruce<br>scrub birch<br>shrubby cinquefoil<br>water sedge<br>horsetail | hybrid white spruce<br>scrub birch<br>shrubby cinquefoil<br>water sedge<br>horsetail | hybrid white spruce<br>scrub birch<br>shrubby cinquefoil<br>water sedge<br>horsetail |
| Associates    |                                                                                                                                                                                  | hybrid white spruce<br>red-osier dogwood<br>mountain alder                         | hybrid white spruce<br>red-osier dogwood<br>mountain alder    | red-osier dogwood<br>mountain alder                                                  | red-osier dogwood<br>mountain alder                                                  | red-osier dogwood<br>mountain alder                                                  |
| Comments      | Vegetation derived from plot data from Expanded Ecosystem Legend for Stoddart Creek Study Area (Marcoux et al 1997) and from the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                    |                                                               |                                                                                      |                                                                                      |                                                                                      |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFdm2 /03 DS Fd - Snowberry - Balsamroot

| Map Unit                                                                                                                                                                                                                                                                                                                                                           | BEC/Site series # | Description                        | CB Code  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------|----------|
| <b>DS</b>                                                                                                                                                                                                                                                                                                                                                          | <b>IDFdm2 /03</b> | <b>Fd - Snowberry - Balsamroot</b> | <b>5</b> |
| DS typically occurs on significantly sloping sites with warm aspects and deep, medium-textured soils. Found on morainal or colluvial blankets with submesic moisture regimes and submesotrophic to mesotrophic nutrient regimes. Soils have a silt loam texture with variable coarse fragment content. Soils are usually calcareous. Moder humus forms are common. |                   |                                    |          |

| Map Symbol    | DS2                                                                                                                                                                                                                                                                                                                                                                               | DS3a, DS3b                                                                                                                            | DS4                                                                                                                                | DS5                                                                                                                                             | DS6                                                                                                                                                  | DS7                                                                                                                                |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                                                                                                                                                                                                                        | Shrub/Herb                                                                                                                            | Pole sapling                                                                                                                       | Young forest                                                                                                                                    | Mature forest                                                                                                                                        | Old forest                                                                                                                         |
| Dominants     | kinnikinnick<br>pinegrass<br>fireweed                                                                                                                                                                                                                                                                                                                                             | clumpy shrub and<br>grassland mosaic of:<br>Douglas-fir<br>pinegrass                                                                  | clumpy open young<br>forests of:<br>Douglas-fir<br>lodgepole pine<br>pinegrass                                                     | clumpy open canopy<br>forests of:<br>Douglas-fir<br>lodgepole pine                                                                              | open forests of:<br><br>Douglas-fir                                                                                                                  | open forests of:<br><br>Douglas-fir                                                                                                |
| Associates    | timber milk-vetch<br>Kentucky bluegrass<br>arrow-leaved balsamroot<br>junegrass<br>orchardgrass<br>bluebunch wheatgrass                                                                                                                                                                                                                                                           | lodgepole pine<br>Rocky Mountain juniper<br>saskatoon<br>bluebunch wheatgrass<br>junegrass<br>arrow-leaved balsamroot<br>kinnikinnick | Rocky Mountain juniper<br>saskatoon<br>soopolallie<br>bluebunch wheatgrass<br>arrow-leaved balsamroot<br>junegrass<br>kinnikinnick | Rocky Mountain juniper<br>soopolallie<br>saskatoon<br>bluebunch wheatgrass<br>arrow-leaved balsamroot<br>pinegrass<br>junegrass<br>kinnikinnick | lodgepole pine<br>Rocky Mountain juniper<br>soopolallie<br>saskatoon<br>bluebunch wheatgrass<br>arrow-leaved balsamroot<br>pinegrass<br>kinnikinnick | Rocky Mountain juniper<br>soopolallie<br>saskatoon<br>bluebunch wheatgrass<br>arrow-leaved balsamroot<br>pinegrass<br>kinnikinnick |
| Comments      | Vegetation derived from plot data from Steamboat Mountain Terrestrial Ecosystem Mapping Project (Kernaghan et al 1998) and from the Nelson Field Guide (Braumandl and Curran 1992).<br>This unit is red listed as a rare and endangered ecosystem by the Conservation Data Centre and is easily threatened by cattle grazing.<br>Cool aspect units have slightly denser canopies. |                                                                                                                                       |                                                                                                                                    |                                                                                                                                                 |                                                                                                                                                      |                                                                                                                                    |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFdm2 /01 DT Fd-PI - Pinegrass - Twinflower

| Map Unit                                                                                                                                                                                                                                                                                             | BEC/Site series # | Description                           | CB Code  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|----------|
| <b>DT</b>                                                                                                                                                                                                                                                                                            | <b>IDFdm2 /01</b> | <b>Fd-PI - Pinegrass - Twinflower</b> | <b>5</b> |
| DT typically occurs on gentle slopes with medium-textured soils. These units occur on morainal or colluvial blanket parent materials with mesic moisture regimes and permesotrophic nutrient regimes. Silt loam textures, mull (moder) humus forms, and eutric brunisol soil development are common. |                   |                                       |          |

| Map Symbol    | DT2                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DT3a, DT3b                                                                                                                           | DT4                                                                                                                                           | DT5                                                                                                                              | DT6                                                                                                                                             | DT7                                                                                                                            |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Shrub/Herb                                                                                                                           | Pole sapling                                                                                                                                  | Young forest                                                                                                                     | Mature forest                                                                                                                                   | Old forest                                                                                                                     |
| Dominants     | pinegrass<br>grasses*                                                                                                                                                                                                                                                                                                                                                                                                                                        | dense shrub cover of:<br>lodgpole pine pinegrass<br>grasses*                                                                         | young dense forests of:<br>Douglas-fir<br>lodgpole pine                                                                                       | dense forests of:<br>Douglas-fir<br>pinegrass<br>red-stemmed<br>feathermoss                                                      | moderately open forests<br>of:<br>Douglas-fir<br>pinegrass<br>red-stemmed<br>feathermoss                                                        | moderately open forests<br>of:<br>Douglas-fir<br>pinegrass<br>red-stemmed<br>feathermoss                                       |
| Associates    | saskatoon<br>junegrass<br>stiff needlegrass<br>bluebunch wheatgrass<br>kinnikinnick<br>rough fescue<br>orchardgrass                                                                                                                                                                                                                                                                                                                                          | Douglas-fir<br>saskatoon<br>soopolallie<br>prickly rose<br>birch-leaved spirea<br>kinnikinnick<br>dwarf blueberry<br>field pussytoes | trembling aspen<br>saskatoon<br>soopolallie<br>prickly rose<br>birch-leaved spirea<br>kinnikinnick<br>pinegrass<br>red-stemmed<br>feathermoss | lodgpole pine<br>trembling aspen<br>saskatoon<br>soopolallie<br>prickly rose<br>birch-leaved spirea<br>kinnikinnick<br>step moss | lodgpole pine<br>trembling aspen<br>saskatoon<br>soopolallie<br>prickly rose<br>birch-leaved spirea<br>kinnikinnick<br>showy aster<br>step moss | trembling aspen<br>saskatoon<br>soopolallie<br>prickly rose<br>birch-leaved spirea<br>kinnikinnick<br>showy aster<br>step moss |
| Comments      | Vegetation derived from plot data from Steamboat Mountain Terrestrial Ecosystem Mapping Project (Kernaghan et al 1998) and from the Nelson Field Guide (Braumandl and Curran 1992).<br>* Composition of grass species depends on amount of disturbance and grazing history (includes Kentucky bluegrass, junegrass, bluebunch wheatgrass, needlegrass).<br>Cool aspect units of this site series have denser and faster regeneration than warm aspect units. |                                                                                                                                      |                                                                                                                                               |                                                                                                                                  |                                                                                                                                                 |                                                                                                                                |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFdm2/07 SH Sxw - Horsetail

| Map Unit                                                                                                                                                                                | BEC/Site series # | Description            | CB Code   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|-----------|
| <b>SH</b>                                                                                                                                                                               | <b>IDFdm2/07</b>  | <b>Sxw - Horsetail</b> | <b>24</b> |
| SH typically occurs on level, moist, coarse-textured fluvial material. Hygic to subhygic soil moisture regimes, permesotrophic soil nutrient regimes, and moder humus forms are common. |                   |                        |           |

| Map Symbol    | SH2                                                                                                                                                                                 | SH3a, SH3b                                                                   | SH4                                                                         | SH5                                                                         | SH6                                                                                                                   | SH7                                                                                               |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                          | Shrub/Herb                                                                   | Pole sapling                                                                | Young forest                                                                | Mature forest                                                                                                         | Old forest                                                                                        |
| Dominants     | bluejoint                                                                                                                                                                           | hybrid white spruce<br>black cottonwood                                      | hybrid white spruce                                                         | hybrid white spruce                                                         | hybrid white spruce                                                                                                   | hybrid white spruce                                                                               |
| Associates    | timber milk-vetch<br>horsetail                                                                                                                                                      | soopolallie<br>mountain alder<br>timber milk-vetch<br>horsetail<br>bluejoint | black cottonwood<br>mountain alder<br>soopolallie<br>horsetail<br>bluejoint | black cottonwood<br>mountain alder<br>soopolallie<br>horsetail<br>bluejoint | black cottonwood<br>mountain alder<br>soopolallie<br>horsetail<br>bluejoint<br>stepmoss<br>red-stemmed<br>feathermoss | mountain alder<br>soopolallie<br>bluejoint<br>horsetail<br>stepmoss<br>red-stemmed<br>feathermoss |
| Comments      | Vegetation derived from plot data from Steamboat Mountain Terrestrial Ecosystem Mapping Project (Kernaghan et al 1998) and from the Nelson Field Guide (Braumandl and Curran 1992). |                                                                              |                                                                             |                                                                             |                                                                                                                       |                                                                                                   |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFdm2/04 SP FdLw - Spruce - Pinegrass

| Map Unit                                                                                                                                                                                                                  | BEC/Site series # | Description                      | CB Code  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------|----------|
| <b>SP</b>                                                                                                                                                                                                                 | <b>IDFdm2/04</b>  | <b>FdLw - Spruce - Pinegrass</b> | <b>5</b> |
| SP typically occurs on fine-textured parent materials in level receiving sites. These sites have mesic to subhygric soil moisture regimes and permesotrophic soil nutrient regimes. Moder and mor humus forms are common. |                   |                                  |          |

| Map Symbol    | SP2                                                                                                                                                                                                                                                                                                                                                         | SP3a, SP3b                                                                                                                        | SP4                                                                                                                                | SP5                                                                                                                                                  | SP6                                                                                                                                              | SP7                                                                                                                                              |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                                                                                                                                                                                                  | Shrub/Herb                                                                                                                        | Pole sapling                                                                                                                       | Young forest                                                                                                                                         | Mature forest                                                                                                                                    | Old forest                                                                                                                                       |
| Dominants     | Kentucky bluegrass                                                                                                                                                                                                                                                                                                                                          | pinegrass<br>lodgepole pine                                                                                                       | lodgepole pine Douglas-fir<br>red-stemmed<br>feathermoss                                                                           | Douglas-fir<br>red-stemmed<br>feathermoss                                                                                                            | hybrid white spruce<br>Douglas-fir<br>red-stemmed<br>feathermoss                                                                                 | hybrid white spruce<br>Douglas-fir<br>red-stemmed<br>feathermoss                                                                                 |
| Associates    | common snowberry<br>pinegrass<br>fireweed                                                                                                                                                                                                                                                                                                                   | hybrid white spruce<br>Douglas-fir<br>paper birch<br>common snowberry<br>soopollalie saskatoon<br>tall Oregon-grape<br>bunchberry | hybrid white spruce<br>paper birch<br>common snowberry<br>soopollalie<br>saskatoon<br>tall Oregon-grape<br>pinegrass<br>bunchberry | hybrid white spruce<br>lodgepole pine<br>paper birch<br>common snowberry<br>soopollalie<br>saskatoon<br>tall Oregon-grape<br>pinegrass<br>twinflower | lodgepole pine<br>trembling aspen<br>paper birch<br>common snowberry<br>soopollalie<br>saskatoon<br>tall Oregon-grape<br>pinegrass<br>twinflower | lodgepole pine<br>trembling aspen<br>paper birch<br>common snowberry<br>soopollalie<br>saskatoon<br>tall Oregon-grape<br>pinegrass<br>twinflower |
| Comments      | Vegetation derived from plot data from Steamboat Mountain Terrestrial Ecosystem Mapping Project (Kernaghan et al 1998) and from the Nelson Field Guide (Braumandl and Curran 1992).<br>Grass species will vary according to disturbance and grazing history. Introduced agronomic species will persist into later structural stages if utilization is high. |                                                                                                                                   |                                                                                                                                    |                                                                                                                                                      |                                                                                                                                                  |                                                                                                                                                  |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFdm2 /05 SS SxwAt - Sarsaparilla

| Map Unit                                                                                                                                                                                                                   | BEC/Site series # | Description                 | CB Code  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------|----------|
| <b>SS</b>                                                                                                                                                                                                                  | <b>IDFdm2 /05</b> | <b>SxwAt - Sarsaparilla</b> | <b>5</b> |
| SS typically occurs on lower slopes with fine-textured soils in receiving sites. These sites have subhygric - hygric soil moisture regimes and permesotrophic soil nutrient regimes. Mor and moder humus forms are common. |                   |                             |          |

| Map Symbol    | SS2                                                                                                                                                                                                                                                                                                                                                         | SS3a, SS3b                                                                                                                                    | SS4                                                                                                                                                            | SS5                                                                                                                                                                                | SS6                                                                                                                                                                            | SS7                                                                                                                                         |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Plant Species | Grass-Forb                                                                                                                                                                                                                                                                                                                                                  | Shrub/Herb                                                                                                                                    | Pole sapling                                                                                                                                                   | Young forest                                                                                                                                                                       | Mature forest                                                                                                                                                                  | Old forest                                                                                                                                  |
| Dominants     | Kentucky bluegrass                                                                                                                                                                                                                                                                                                                                          | Kentucky bluegrass                                                                                                                            | trembling aspen                                                                                                                                                | trembling aspen                                                                                                                                                                    | hybrid white spruce                                                                                                                                                            | hybrid white spruce                                                                                                                         |
| Associates    | blue wildrye<br>fireweed<br>bluejoint<br>redtop                                                                                                                                                                                                                                                                                                             | hybrid white spruce<br>trembling aspen<br>paper birch<br>common snowberry<br>red-osier dogwood<br>redtop<br>blue wildrye<br>wild sarsaparilla | hybrid white spruce<br>paper birch<br>common snowberry<br>red-osier dogwood<br>Kentucky bluegrass<br>redtop<br>blue wildrye<br>wild sarsaparilla<br>bunchberry | hybrid white spruce<br>paper birch<br>red-osier dogwood<br>common snowberry<br>Kentucky bluegrass<br>blue wildrye<br>redtop<br>wild sarsaparilla<br>common horsetail<br>bunchberry | trembling aspen<br>paper birch<br>red-osier dogwood<br>common snowberry<br>twinlineflower<br>wild sarsaparilla<br>common horsetail<br>bunchberry<br>red-stemmed<br>feathermoss | trembling aspen<br>red-osier dogwood<br>twinlineflower<br>wild sarsaparilla<br>common horsetail<br>bunchberry<br>red-stemmed<br>feathermoss |
| Comments      | Vegetation derived from plot data from Steamboat Mountain Terrestrial Ecosystem Mapping Project (Kernaghan et al 1998) and from the Nelson Field Guide (Braumandl and Curran 1992).<br>Grass species will vary according to disturbance and grazing history. Introduced agronomic species will persist into later structural stages if utilization is high. |                                                                                                                                               |                                                                                                                                                                |                                                                                                                                                                                    |                                                                                                                                                                                |                                                                                                                                             |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFun/02 BJ Bluebunch wheatgrass - Junegrass

| Map Unit                                                                                                          | BEC/Site series # | Description                             | CB Code   |
|-------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|-----------|
| <b>BJ</b>                                                                                                         | <b>IDFun/02</b>   | <b>Bluebunch wheatgrass - Junegrass</b> | <b>98</b> |
| BJ typically occurs on rock outcrops and very shallow soils with warm aspects. The moisture regime is very xeric. |                   |                                         |           |

| Map Symbol    | BJ2                                                                                                                        | BJ3a                                                                                                                        | BJ3b                                                                                                                     | BJ4                                                                                                                      | BJ5                                                                                                                      | BJ6                                                                                                                      | BJ7                                                                                                                      |
|---------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                 | Low shrub                                                                                                                   | Tall shrub                                                                                                               | Pole sapling                                                                                                             | Young forest                                                                                                             | Mature forest                                                                                                            | Old growth                                                                                                               |
| Dominants     | kinnikinnick<br>bluebunch<br>wheatgrass<br><i>Rhacomitrium</i> moss<br>compact selaginella                                 | kinnikinnick<br>bluebunch<br>wheatgrass<br><i>Rhacomitrium</i> moss<br>compact selaginella                                  | kinnikinnick<br>bluebunch<br>wheatgrass<br><i>Rhacomitrium</i> moss<br>compact selaginella                               | kinnikinnick<br>bluebunch<br>wheatgrass<br><i>Rhacomitrium</i> moss<br>compact selaginella                               | kinnikinnick<br>bluebunch<br>wheatgrass<br><i>Rhacomitrium</i> moss<br>compact selaginella                               | kinnikinnick<br>bluebunch<br>wheatgrass<br><i>Rhacomitrium</i> moss<br>compact selaginella                               | kinnikinnick<br>bluebunch<br>wheatgrass<br><i>Rhacomitrium</i> moss<br>compact selaginella                               |
| Associates    | junegrass<br>juniper haircap<br>moss<br>foliose lichens<br>crustose lichens<br>cup lichens                                 | Douglas-fir<br>ponderosa pine<br>junegrass<br>juniper haircap<br>moss<br>foliose lichens<br>crustose lichens<br>cup lichens | Douglas-fir<br>ponderosa pine<br>junegrass<br>juniper haircap moss<br>foliose lichens<br>crustose lichens<br>cup lichens | Douglas-fir<br>ponderosa pine<br>junegrass<br>juniper haircap moss<br>foliose lichens<br>crustose lichens<br>cup lichens | Douglas-fir<br>ponderosa pine<br>junegrass<br>juniper haircap moss<br>foliose lichens<br>crustose lichens<br>cup lichens | Douglas-fir<br>ponderosa pine<br>junegrass<br>juniper haircap moss<br>foliose lichens<br>crustose lichens<br>cup lichens | Douglas-fir<br>ponderosa pine<br>junegrass<br>juniper haircap moss<br>foliose lichens<br>crustose lichens<br>cup lichens |
| Comments      | Vegetation derived from plot data from Expanded Biophysical Ecosystem Legend Deer Creek Watershed (Ketcheson et al, 1995). |                                                                                                                             |                                                                                                                          |                                                                                                                          |                                                                                                                          |                                                                                                                          |                                                                                                                          |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFun/05 FS Fd – Common snowberry

| Map Unit                                                                                                                                                                                                                                | BEC/Site series # | Description                  | CB Code  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------|----------|
| <b>FS</b>                                                                                                                                                                                                                               | <b>IDFun/05</b>   | <b>Fd – Common snowberry</b> | <b>5</b> |
| FS typically occurs on gently cool aspects with deep and shallow soils from colluvial, morainal, and glaciofluvial parent materials. Soil textures are generally sandy to gravelly in textures with submesic to mesic moisture regimes. |                   |                              |          |

| Map Symbol    | FS2                                                                                                                        | FS3a                                                     | FS3b                                                     | FS4                                                                               | FS5                                                                                             | FS6                                                                                                                               | FS7                                                                                                                               |
|---------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                 | Low shrub                                                | Tall shrub                                               | Pole sapling                                                                      | Young forest                                                                                    | Mature forest                                                                                                                     | Old growth                                                                                                                        |
| Dominants     | fireweed<br>juniper haircap<br>moss                                                                                        | Douglas maple<br>common snowberry<br>saskatoon<br>willow | Douglas maple<br>common snowberry<br>saskatoon<br>willow | Douglas-fir<br>Douglas maple<br>common snowberry<br>saskatoon<br>willow           | Douglas-fir<br>common snowberry<br>saskatoon<br>pinegrass                                       | Douglas-fir<br>common snowberry<br>saskatoon<br>pinegrass<br>juniper haircap moss<br><i>Brachythecium</i> moss<br>foliose lichens | Douglas-fir<br>common snowberry<br>saskatoon<br>pinegrass<br>juniper haircap moss<br><i>Brachythecium</i> moss<br>foliose lichens |
| Associates    | pinegrass                                                                                                                  | pinegrass<br>juniper haircap moss                        | pinegrass<br>juniper haircap moss                        | pinegrass<br>juniper haircap moss<br><i>Brachythecium</i> moss<br>foliose lichens | Douglas maple<br>willow<br>juniper haircap moss<br><i>Brachythecium</i> moss<br>foliose lichens | common snowberry<br>saskatoon<br>pinegrass                                                                                        | common snowberry<br>saskatoon<br>pinegrass                                                                                        |
| Comments      | Vegetation derived from plot data from Expanded Biophysical Ecosystem Legend Deer Creek Watershed (Ketcheson et al, 1995). |                                                          |                                                          |                                                                                   |                                                                                                 |                                                                                                                                   |                                                                                                                                   |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFun/03 FW FdPy – Bluebunch wheatgrass

| Map Unit                                                                                                                                                                                                                                                                                                                                                                                                                                      | BEC/Site series # | Description                        | CB Code     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------|-------------|
| <b>FW</b>                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>IDFun/03</b>   | <b>FdPy – Bluebunch wheatgrass</b> | <b>5, 7</b> |
| FW typically occurs in open stands on sloping lacustrine deposits with warm aspects and subxeric moisture regimes. Soil textures are generally sandy to clayey. Occurs on morainal and colluvial parent materials on warm aspects with shallow soils. Soil textures are generally sandy to gravely with very xeric to subxeric moisture regimes. This unit is often associated with the Bluebunch wheatgrass-Junegrass rock outcrop ecosystem |                   |                                    |             |

| Map Symbol    | FW2                                                                                                                       | FW3a                                                                                              | FW3b                                                                            | FW4                                                                                                             | FW5                                                                                               | FW6                                                                                               | FW7                                                                                |
|---------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                | Low shrub                                                                                         | Tall shrub                                                                      | Pole sapling                                                                                                    | Young forest                                                                                      | Mature forest                                                                                     | Old growth                                                                         |
| Dominants     |                                                                                                                           | spotted knapweed<br>fireweed<br>cinquefoil<br>goat's-beard                                        | common snowberry<br>saskatoon<br>choke cherry<br>mallow ninebark<br>ocean spray | saskatoon<br>common snowberry                                                                                   | bluebunch<br>wheatgrass                                                                           | bluebunch<br>wheatgrass                                                                           | Douglas-fir<br>bluebunch<br>wheatgrass                                             |
| Associates    | spotted knapweed<br>fireweed<br>goat's-beard<br>cinquefoil                                                                | mallow ninebark<br>saskatoon<br>common snowberry<br>chokecherry<br>spotted knapweed<br>cinquefoil | Douglas-fir<br>ponderosa pine<br>spotted knapweed<br>bluebunch<br>wheatgrass    | Douglas-fir<br>ponderosa pine<br>mallow ninebark<br>choke cherry<br>spotted knapweed<br>bluebunch<br>wheatgrass | Douglas-fir<br>ponderosa pine<br>mallow ninebark<br>saskatoon<br>common snowberry<br>kinnikinnick | Douglas-fir<br>ponderosa pine<br>mallow ninebark<br>saskatoon<br>common snowberry<br>kinnikinnick | ponderosa pine<br>mallow ninebark<br>saskatoon<br>common snowberry<br>kinnikinnick |
| Comments      | Vegetation derived from plot data from Expanded Biophysical Ecosystem Legend Deer Creek Watershed (Ketcheson et al, 1995) |                                                                                                   |                                                                                 |                                                                                                                 |                                                                                                   |                                                                                                   |                                                                                    |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFun/04 PS PyFd – Common snowberry

| Map Unit                                                                                                                                                                                                  | BEC/Site series # | Description                    | CB Code  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------|----------|
| <b>PS</b>                                                                                                                                                                                                 | <b>IDFun/04</b>   | <b>PyFd – Common snowberry</b> | <b>5</b> |
| PS typically occurs on deep soil, coarse-textured fluvial, glaciofluvial and morainal blankets with warm aspects. Submesic to subxeric moisture regimes with sandy to sandy-gravelly textures are common. |                   |                                |          |

| Map Symbol    | PS2                                                                                                                        | PS3a                                                                                   | PS3b                                                                                                     | PS4                                                                                                | PS5                                                                               | PS6                                                                          | PS7                                                         |
|---------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                 | Low shrub                                                                              | Tall shrub                                                                                               | Pole sapling                                                                                       | Young forest                                                                      | Mature forest                                                                | Old growth                                                  |
| Dominants     | spotted knapweed<br>fireweed<br>fescue<br>bluebunch<br>wheatgrass                                                          | spotted knapweed<br>common snowberry<br>saskatoon<br>fescue<br>bluebunch<br>wheatgrass | spotted knapweed<br>common snowberry<br>saskatoon<br>fescue<br>bluebunch<br>wheatgrass                   | common snowberry<br>saskatoon<br>fescue<br>bluebunch<br>wheatgrass                                 | Douglas-fir<br>Douglas maple<br>saskatoon<br>pinegrass<br>bluebunch<br>wheatgrass | tall Oregon-grape<br>bluebunch<br>wheatgrass<br>pinegrass                    | tall Oregon-grape<br>bluebunch<br>wheatgrass<br>pinegrass   |
| Associates    | cinquefoil<br>pinegrass                                                                                                    | Douglas maple<br>tall Oregon-grape<br>falsebox<br>ocean spray<br>pinegrass<br>fireweed | Douglas maple<br>ponderosa pine<br>tall Oregon-grape<br>falsebox<br>ocean spray<br>pinegrass<br>fireweed | Douglas-fir<br>ponderosa pine<br>Douglas maple<br>falsebox<br>ocean spray<br>pinegrass<br>fireweed | ponderosa pine<br>common snowberry<br>falsebox                                    | Douglas-fir<br>ponderosa pine<br>Douglas maple<br>common snowberry<br>fescue | Douglas-fir<br>ponderosa pine<br>common snowberry<br>fescue |
| Comments      | Vegetation derived from plot data from Expanded Biophysical Ecosystem Legend Deer Creek Watershed (Ketcheson et al, 1995). |                                                                                        |                                                                                                          |                                                                                                    |                                                                                   |                                                                              |                                                             |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### IDFun/06 RH Cw – Hooker's fairybells

| Map Unit                                                                                                                            | BEC/Site series # | Description                     | CB Code  |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------|----------|
| <b>RH</b>                                                                                                                           | <b>IDFun/06</b>   | <b>Cw – Hooker's fairybells</b> | <b>5</b> |
| RH typically occurs on blocky, very coarse-textured colluvial soils in toe slope positions with submesic to mesic moisture regimes. |                   |                                 |          |

| Map Symbol    | RH2                                                                                                                        | RH3a                                                                                                           | RH3b                                                                                                                                                      | RH4                                                                                                                                   | RH5                                                                                                                                                              | RH6                                                                                                                                               | RH7                                                                                     |
|---------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                 | Low shrub                                                                                                      | Tall shrub                                                                                                                                                | Pole sapling                                                                                                                          | Young forest                                                                                                                                                     | Mature forest                                                                                                                                     | Old growth                                                                              |
| Dominants     | fireweed<br>spotted<br>knapweed<br>bracken<br>twinflower                                                                   | paper birch<br>hazelnut<br>thimbleberry<br>bracken                                                             | paper birch<br>hazelnut<br>thimbleberry<br>bracken                                                                                                        | Douglas-fir<br>paper birch<br>hazelnut<br>thimbleberry<br>bracken<br>twinflower                                                       | Douglas-fir<br>Paper birch<br>hazelnut<br>twinflower                                                                                                             | Douglas-fir<br>twinflower                                                                                                                         | western redcedar<br>twinflower                                                          |
| Associates    | Hooker's<br>fairybells<br>spreading<br>dogbane                                                                             | fireweed<br>spotted knapweed<br>tall-Oregon grape<br>bitter cherry<br>Hooker's fairybells<br>spreading dogbane | western redcedar<br>western larch<br>ponderosa pine<br>spotted knapweed<br>tall-Oregon grape<br>bitter cherry<br>Hooker's fairybells<br>spreading dogbane | western redcedar<br>western larch<br>ponderosa pine<br>tall-Oregon grape<br>bitter cherry<br>Hooker's fairybells<br>spreading dogbane | western redcedar<br>western larch<br>ponderosa pine<br>thimbleberry<br>tall Oregon-grape<br>bitter cherry<br>Hooker's fairybells<br>bracken<br>spreading dogbane | western redcedar<br>western larch<br>ponderosa pine<br>hazelnut<br>tall-Oregon grape<br>bitter cherry<br>Hooker's fairybells<br>spreading dogbane | Douglas-fir<br>western larch<br>hazelnut<br>tall Oregon-grape<br>Hooker's<br>fairybells |
| Comments      | Vegetation derived from plot data from Expanded Biophysical Ecosystem Legend Deer Creek Watershed (Ketcheson et al, 1995). |                                                                                                                |                                                                                                                                                           |                                                                                                                                       |                                                                                                                                                                  |                                                                                                                                                   |                                                                                         |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### PPdh2/03 AR Py - At - Rose - Solomon's Seal

| Map Unit                                                                                                                                                                                                                                                                                                                                                                                                         | BEC/Site series # | Description                            | CB Code  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------|----------|
| <b>AR</b>                                                                                                                                                                                                                                                                                                                                                                                                        | <b>PPdh2/03</b>   | <b>Py - At - Rose - Solomon's Seal</b> | <b>7</b> |
| AR typically occurs on clay textured lacustrine materials, or sandy, gravely glaciofluvial or lacustrine materials in concave, receiving positions. Soil moisture regimes are mesic to subhygric, soil nutrients are permesotrophic. Humus form varies with structural stage. Soil development can range from brunisolic to glysollic depending upon material texture and degree of aeration within the profile. |                   |                                        |          |

| Map Symbol    | ARb2                                                                                                                                                                 | AR3a                                                                                                 | AR3b                                                                                                 | AR4                                                                                                                       | AR5                                                                                                                                                                                          | AR6                                                                                                                      | AR7                                                                                                                      |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                           | Low shrub                                                                                            | Tall Shrub                                                                                           | Pole sapling                                                                                                              | Young forest                                                                                                                                                                                 | Mature forest                                                                                                            | Old forest                                                                                                               |
| Dominants     | blue wildrye<br>Kentucky bluegrass                                                                                                                                   | trembling aspen<br>snowberry<br>prairie rose<br>willow<br>blue wildrye                               | trembling aspen<br>snowberry<br>prairie rose<br>willow<br>blue wildrye                               | trembling aspen<br>ponderosa pine                                                                                         | ponderosa pine<br>trembling aspen                                                                                                                                                            | ponderosa pine<br>trembling aspen<br>pinegrass                                                                           | ponderosa pine<br>trembling aspen<br>pinegrass                                                                           |
| Associates    | sweet-scented<br>bedstraw<br>pearly everlasting<br>leafy aster<br>pinegrass                                                                                          | ponderosa pine<br>Kentucky bluegrass<br>pinegrass<br>sweet-scented<br>bedstraw<br>pearly everlasting | ponderosa pine<br>Kentucky bluegrass<br>pinegrass<br>sweet-scented<br>bedstraw<br>pearly everlasting | lodgepole pine<br>snowberry<br>prairie rose<br>bluebunch<br>wheatgrass<br>Kentucky bluegrass<br>blue wildrye<br>pinegrass | lodgepole pine<br>Rocky Mountain<br>juniper<br>tall Oregon-grape<br>snowberry<br>prairie rose<br>pine grass<br>bluebunch<br>wheatgrass<br>Kentucky bluegrass<br><i>Brachythecium</i><br>moss | tall Oregon-grape<br>snowberry<br>prairie rose<br>bluebunch<br>wheatgrass<br>leafy aster<br><i>Brachythecium</i><br>moss | tall Oregon-grape<br>snowberry<br>prairie rose<br>bluebunch<br>wheatgrass<br>leafy aster<br><i>Brachythecium</i><br>moss |
| Comments      | Vegetation derived from plot data from Wasa Provincial Park Ecosystem Map Report (Ketcheson et al 1998) and from the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                      |                                                                                                      |                                                                                                                           |                                                                                                                                                                                              |                                                                                                                          |                                                                                                                          |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### PPdh2/04 CD Act - Dogwood - Nootka Rose

| Map Unit                                                                                                                                                                                                                                | BEC/Site series # | Description                        | CB Code   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------|-----------|
| <b>CD</b>                                                                                                                                                                                                                               | <b>PPdh2/04</b>   | <b>Act - Dogwood - Nootka Rose</b> | <b>25</b> |
| CD occurs on lacustrine glaciofluvial materials. Soil moisture regime varies from subhygric to hygric. These sites can receive upslope seepage, as well as have shallow water tables. Nutrient regimes are permesotrophic to eutrophic. |                   |                                    |           |

| Map Symbol    | CD2                                                                                                                                                                  | CD3a                                                                                                 | CD3b                                                                                                 | CD4                                                                                                                         | CD5                                                                                                        | CD6                                                                                                                    | CD7                                                                                                                    |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                           | Low shrub                                                                                            | Tall Shrub                                                                                           | Pole sapling                                                                                                                | Young forest                                                                                               | Mature forest                                                                                                          | Old forest                                                                                                             |
| Dominants     | hairy wildrye<br>scouring rush                                                                                                                                       | black cottonwood<br>red-osier dogwood<br>mountain alder                                              | black cottonwood<br>red-osier dogwood<br>mountain alder                                              | black cottonwood<br>red-osier dogwood<br>mountain alder                                                                     | black cottonwood<br>red-osier dogwood<br>mountain alder                                                    | black cottonwood<br>hybrid white spruce<br>red-osier dogwood<br>mountain alder<br>Nootka rose                          | black cottonwood<br>hybrid white spruce<br>red-osier dogwood<br>mountain alder<br>Nootka rose                          |
| Associates    | common dandelion<br>orchard grass<br>quackgrass<br>sedges<br>star-flowered<br>Solomon's seal                                                                         | Nootka rose<br>hairy wildrye<br>scouring rush<br>common dandelion<br>star-flowered<br>Solomon's seal | Nootka rose<br>hairy wildrye<br>scouring rush<br>common dandelion<br>star-flowered<br>Solomon's seal | hybrid white spruce<br>Nootka rose<br>common dandelion<br>star-flowered<br>Solomon's seal<br>scouring rush<br>hairy wildrye | hybrid white spruce<br>Nootka rose<br>common dandelion<br>star-flowered<br>Solomon's seal<br>scouring rush | saskatoon<br>western snowberry<br>prickly rose<br>common dandelion<br>star-flowered<br>Solomon's seal<br>scouring-rush | saskatoon<br>western snowberry<br>prickly rose<br>common dandelion<br>star-flowered<br>Solomon's seal<br>scouring-rush |
| Comments      | Vegetation derived from plot data from Wasa Provincial Park Ecosystem Map Report (Ketcheson et al 1998) and from the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                      |                                                                                                      |                                                                                                                             |                                                                                                            |                                                                                                                        |                                                                                                                        |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### PPdh2/01 PW Py - Bluebunch wheatgrass - Junegrass

| Map Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | BEC/Site series # | Description                                  | CB Code  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------|----------|
| <b>PW</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>PPdh2/01</b>   | <b>Py - Bluebunch wheatgrass - Junegrass</b> | <b>7</b> |
| <p>PW generally occurs on gently sloping sandy glaciofluvial blankets, but is also seen on eolian blankets often with a concave surface shape with from 0% to 40% coarse fragments. Soil moisture regimes can be between submesic and mesic, soil nutrient regimes between submesotrophic and mesotrophic, although in some sites carbonates can be found at about 35 cm in the soil profile. Soil development is brunisolic, can be either eutric or dystic depending upon the presence or absence of carbonates in the profile. Humus forms vary from rhizomulls on grass forb dominated sites to mors on forested sites.</p> |                   |                                              |          |

| Map Symbol    | PW2                                                                                                                                                                  | PW3a                                                                                                                                                                                | PW3b                                                                                                                                                                                | PW4                                                                  | PW5                                                                                     | PW6                                                      | PW7                                                      |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                           | Low shrub                                                                                                                                                                           | Tall Shrub                                                                                                                                                                          | Pole sapling                                                         | Young forest                                                                            | Mature forest                                            | Old forest                                               |
| Dominants     | junegrass<br>needle-and-thread<br>grass<br>ribbed cladonia                                                                                                           | ponderosa pine<br>kinninnick                                                                                                                                                        | ponderosa pine<br>kinninnick                                                                                                                                                        | ponderosa pine<br>bluebunch<br>wheatgrass                            | ponderosa pine<br>Douglas-fir<br>bluebunch<br>wheatgrass                                | ponderosa pine<br>Douglas-fir<br>bluebunch<br>wheatgrass | ponderosa pine<br>Douglas-fir<br>bluebunch<br>wheatgrass |
| Associates    | low pussytoes<br>umber pussytoes<br>spreading phlox<br>wooly plantain<br>sulphur buckwheat<br>golden-aster                                                           | saskatoon<br>prairie rose<br>bluebunch<br>wheatgrass<br>rough fescue<br>Rocky Mountain<br>fescue<br>umber pussytoes<br>aster<br>sedge<br>wild onion<br><i>Brachythecium</i><br>moss | saskatoon<br>prairie rose<br>bluebunch<br>wheatgrass<br>rough fescue<br>Rocky Mountain<br>fescue<br>umber pussytoes<br>aster<br>sedge<br>wild onion<br><i>Brachythecium</i><br>moss | stiff needlegrass<br>Kentucky bluegrass<br>snowberry<br>lambquarters | prairie rose<br>saskatoon<br>rough fescue<br>Rocky Mountain<br>fescue<br>rosy pussytoes | yarrow<br>rosy pussytoes<br>prairie cactus               | yarrow<br>rosy pussytoes<br>prairie cactus               |
| Comments      | Vegetation derived from plot data from Wasa Provincial Park Ecosystem Map Report (Ketcheson et al 1998) and from the Nelson Field Guide (Braumandl and Curran 1992). |                                                                                                                                                                                     |                                                                                                                                                                                     |                                                                      |                                                                                         |                                                          |                                                          |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### PPdh2/02a WJa Bluebunch wheatgrass - Junegrass

| Map Unit                                                                                                                                                                                                                                                                                         | BEC/Site series # | Description                             | CB Code   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|-----------|
| <b>WJa</b>                                                                                                                                                                                                                                                                                       | <b>PPdh2/02a</b>  | <b>Bluebunch wheatgrass - Junegrass</b> | <b>15</b> |
| WJa generally occurs on significant warm slopes with coarse glaciofluvial or morainal materials. Soil moisture regimes are xeric to subxeric. Soil development is brunisolic, in some sites a calcium carbonate hardpan was observed at about 35 cm in depth. Humus form is usually a rhizomull. |                   |                                         |           |

| Map Symbol    | WJa2                                                                                                                                                                               | WJa3a                                                                                                                                                                                              | WJa3b                                                                                                                                                                                              | WJa4                                                                                                                                                                                               | WJa5                                                                                     | WJa6                                                                                                                   | WJa7                                                                                                                   |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                         | Low shrub                                                                                                                                                                                          | Tall Shrub                                                                                                                                                                                         | Pole sapling                                                                                                                                                                                       | Young forest                                                                             | Mature forest                                                                                                          | Old forest                                                                                                             |
| Dominants     | bluebunch<br>wheatgrass<br>Idaho fescue<br>rough fescue                                                                                                                            | bluebunch<br>wheatgrass<br>Idaho fescue<br>rough fescue                                                                                                                                            | bluebunch<br>wheatgrass<br>Idaho fescue<br>rough fescue                                                                                                                                            | ponderosa pine                                                                                                                                                                                     | ponderosa pine<br>Rocky Mountain<br>fescue<br>bluebunch<br>wheatgrass<br>umber pussytoes | ponderosa pine<br>Idaho fescue                                                                                         | ponderosa pine<br>Idaho fescue                                                                                         |
| Associates    | Rocky Mountain<br>fescue<br>Richardson's<br>needlegrass<br>few-flowered<br>shooting star<br>Montana larkspur<br>nine-leaved desert<br>parsley<br>prairie crocus<br>umber pussytoes | pasture sage<br>prairie rose<br>Rocky Mountain<br>fescue<br>Richardson's<br>needlegrass<br>shooting star<br>Montana larkspur<br>nine-leaved desert<br>parsley<br>prairie crocus<br>umber pussytoes | pasture sage<br>prairie rose<br>Rocky Mountain<br>fescue<br>Richardson's<br>needlegrass<br>shooting star<br>Montana larkspur<br>nine-leaved desert<br>parsley<br>prairie crocus<br>umber pussytoes | pasture sage<br>prairie rose<br>Rocky Mountain<br>fescue<br>Richardson's<br>needlegrass<br>shooting star<br>Montana larkspur<br>nine-leaved desert<br>parsley<br>prairie crocus<br>umber pussytoes | rough fescue<br>junegrass<br>ribbed cladonia                                             | Rocky Mountain<br>fescue<br>rough fescue<br>junegrass<br>bluebunch<br>wheatgrass<br>umber pussytoes<br>ribbed cladonia | Rocky Mountain<br>fescue<br>rough fescue<br>junegrass<br>bluebunch<br>wheatgrass<br>umber pussytoes<br>ribbed cladonia |
| Comments      | Vegetation derived from plot data from Wasa Provincial Park Ecosystem Map Report (Ketcheson et al 1998) and from the Nelson Field Guide (Braumandl and Curran 1992).               |                                                                                                                                                                                                    |                                                                                                                                                                                                    |                                                                                                                                                                                                    |                                                                                          |                                                                                                                        |                                                                                                                        |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### PPdh2/02b WJb Bluebunch wheatgrass - Junegrass

| Map Unit                                                                                                                                                                                                                                                                                                                                                 | BEC/Site series # | Description                             | CB Code   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|-----------|
| <b>WJb</b>                                                                                                                                                                                                                                                                                                                                               | <b>PPdh2/02b</b>  | <b>Bluebunch wheatgrass - Junegrass</b> | <b>15</b> |
| WJb occurs on level sandy to sandy gravelly glaciofluvial blankets, occasionally thin, sandy eolian veneers were observed as a capping on this material. Soil moisture regimes are mesic to submesic. Soil development is brunisolic, in some sites a calcium carbonate hardpan was observed at about 35 cm in depth. Humus form is usually a rhizomull. |                   |                                         |           |

| Map Symbol    | WJb2                                                                                                                                                                               | WJb3a                                                                                                                                                                                              | WJb3b                                                                                                                                                                                                                | WJb4                                                                                                                                                                                               | WJb5                                                                                     | WJb6                                                                                        | WJb7                                                                                        |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                         | Low shrub                                                                                                                                                                                          | Tall Shrub                                                                                                                                                                                                           | Pole sapling                                                                                                                                                                                       | Young forest                                                                             | Mature forest                                                                               | Old forest                                                                                  |
| Dominants     | bluebunch<br>wheatgrass<br>Idaho fescue<br>rough fescue                                                                                                                            | bluebunch<br>wheatgrass<br>Idaho fescue<br>rough fescue                                                                                                                                            | bluebunch<br>wheatgrass<br>Idaho fescue<br>rough fescue<br>junegrass                                                                                                                                                 | ponderosa pine<br>bluebunch<br>wheatgrass<br>Idaho fescue<br>rough fescue<br>junegrass                                                                                                             | ponderosa pine<br>Rocky Mountain<br>fescue<br>bluebunch<br>wheatgrass<br>umber pussytoes | ponderosa pine<br>Idaho fescue<br>bluebunch<br>wheatgrass                                   | ponderosa pine<br>Idaho fescue<br>bluebunch<br>wheatgrass                                   |
| Associates    | Rocky Mountain<br>fescue<br>Richardson's<br>needlegrass<br>few-flowered<br>shooting star<br>Montana larkspur<br>nine-leaved desert<br>parsley<br>prairie crocus<br>umber pussytoes | pasture sage<br>prairie rose<br>Rocky Mountain<br>fescue<br>Richardson's<br>needlegrass<br>shooting star<br>Montana larkspur<br>nine-leaved desert<br>parsley<br>prairie crocus<br>umber pussytoes | ponderosa pine<br>pasture sage<br>prairie rose<br>Rocky Mountain<br>fescue<br>Richardson's<br>needlegrass<br>shooting star<br>Montana larkspur<br>nine-leaved desert<br>parsley<br>prairie crocus<br>umber pussytoes | pasture sage<br>prairie rose<br>Rocky Mountain<br>fescue<br>Richardson's<br>needlegrass<br>shooting star<br>Montana larkspur<br>nine-leaved desert<br>parsley<br>prairie crocus<br>umber pussytoes | rough fescue<br>junegrass<br>ribbed cladonia                                             | Rocky Mountain<br>fescue<br>rough fescue<br>junegrass<br>umber pussytoes<br>ribbed cladonia | Rocky Mountain<br>fescue<br>rough fescue<br>junegrass<br>umber pussytoes<br>ribbed cladonia |
| Comments      | Vegetation derived from plot data from Wasa Provincial Park Ecosystem Map Report (Ketcheson et al 1998) and from the Nelson Field Guide (Braumandl and Curran 1992).               |                                                                                                                                                                                                    |                                                                                                                                                                                                                      |                                                                                                                                                                                                    |                                                                                          |                                                                                             |                                                                                             |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### SBSdh1/08 BB Sb - Scrub birch – Sedge

| Map Unit                                                                                                        | BEC/Site series # | Description                     | CB Code   |
|-----------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------|-----------|
| <b>BB</b>                                                                                                       | <b>SBSdh1/08</b>  | <b>Sb - Scrub birch - Sedge</b> | <b>24</b> |
| BB typically occurs on level moisture-receiving sites with medium-textured soils and a fluctuating water table. |                   |                                 |           |

| Map Symbol    | BB2                                                                                                                                                                                                                       | BB3a                                                        | BB3b                                                  | BB4                                                                                  | BB5                                                                                  | BB6                                                                                  | BB7                                                                                  |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                   | Tall shrub                                            | Pole sapling                                                                         | Young forest                                                                         | Mature forest                                                                        | Old forest                                                                           |
| Dominants     | dense herb cover of:<br>baltic rush<br>sphagnum<br>sedges                                                                                                                                                                 | dense shrub cover of:<br>black spruce<br>sphagnum<br>sedges | dense cover of:<br>black spruce<br>sphagnum<br>sedges | open forest of:<br>black spruce<br>sphagnum<br>sedges                                | open forest of:<br>black spruce<br>sphagnum<br>sedges                                | open forest of:<br>black spruce<br>sphagnum<br>sedges                                | open forest of:<br>black spruce<br>sphagnum<br>sedges                                |
| Associates    | sticky false<br>asphodel<br>glow moss<br>horsetails                                                                                                                                                                       | Labrador tea<br>horsetails<br>glow moss                     | Labrador tea<br>horsetails<br>glow moss               | Labrador tea<br>scrub birch<br>horsetails<br>red-stemmed<br>feathermoss<br>glow moss | Labrador tea<br>scrub birch<br>horsetails<br>red-stemmed<br>feathermoss<br>glow moss | Labrador tea<br>scrub birch<br>horsetails<br>red-stemmed<br>feathermoss<br>glow moss | Labrador tea<br>scrub birch<br>horsetails<br>red-stemmed<br>feathermoss<br>glow moss |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (DeLong and Fahlman 1996). |                                                             |                                                       |                                                                                      |                                                                                      |                                                                                      |                                                                                      |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### SBSdh1/07 SH Sxw - Horsetail

| Map Unit                                                                                                        | BEC/Site series # | Description            | CB Code      |
|-----------------------------------------------------------------------------------------------------------------|-------------------|------------------------|--------------|
| <b>SH</b>                                                                                                       | <b>SBSdh1/07</b>  | <b>Sxw - Horsetail</b> | <b>5, 24</b> |
| SH typically occurs on level moisture-receiving sites with medium-textured soils and a fluctuating water table. |                   |                        |              |

| Map Symbol    | SH2                                                                                                                                                                                                                       | SH3a                                                                                          | SH3b                                                                                     | SH4                                                                                      | SH5                                                                                                                | SH6                                                                                                                | SH7                                                                                                                |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                                                     | Tall shrub                                                                               | Pole sapling                                                                             | Young forest                                                                                                       | Mature forest                                                                                                      | Old forest                                                                                                         |
| Dominants     | dense herb cover of:<br>fireweed<br>lady fern<br>sedges                                                                                                                                                                   | dense shrub/herb cover of:<br>hybrid white spruce<br>black cottonwood<br>willows<br>lady fern | dense cover of:<br>hybrid white spruce<br>black cottonwood<br>willows<br>lady fern       | closed stands of:<br>hybrid white spruce<br>black cottonwood<br>willows<br>lady fern     | closed stands of:<br>hybrid white spruce<br>black cottonwood                                                       | closed stands of:<br>hybrid white spruce<br>black cottonwood                                                       | closed stands of:<br>hybrid white spruce                                                                           |
| Associates    | willows<br>horsetail                                                                                                                                                                                                      | red-osier dogwood<br>black twinberry<br>Sitka alder<br>horsetail<br>fireweed<br>oak fern      | red-osier dogwood<br>black twinberry<br>Sitka alder<br>horsetail<br>fireweed<br>oak fern | red-osier dogwood<br>black twinberry<br>Sitka alder<br>horsetail<br>fireweed<br>oak fern | red-osier dogwood<br>black twinberry<br>willows<br>Sitka alder<br>horsetail<br>lady fern<br>oak fern<br>bunchberry | red-osier dogwood<br>black twinberry<br>willows<br>Sitka alder<br>horsetail<br>lady fern<br>oak fern<br>bunchberry | red-osier dogwood<br>black twinberry<br>willows<br>Sitka alder<br>horsetail<br>lady fern<br>oak fern<br>bunchberry |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (Delong and Fahlman 1996). |                                                                                               |                                                                                          |                                                                                          |                                                                                                                    |                                                                                                                    |                                                                                                                    |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### SBSdh1/01 SR SxwFd - Ricegrass

| Map Unit  | BEC/Site series # | Description              | CB Code  |
|-----------|-------------------|--------------------------|----------|
| <b>SR</b> | <b>SBSdh1/01</b>  | <b>SxwFd - Ricegrass</b> | <b>5</b> |

SR typically occurs on gentle slopes with deep, medium-textured soils with a submesic to mesic moisture regime.

| Map Symbol    | SR2                                                                                                                                                                                                                       | SR3a                                                                                    | SR3b                                                                                    | SR4                                                                                                   | SR5                                                                                                                                                                           | SR6                                                                                                                                                                                    | SR7                                                                                                                                                                                                      |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                                               | Tall shrub                                                                              | Pole sapling                                                                                          | Young forest                                                                                                                                                                  | Mature forest                                                                                                                                                                          | Old forest                                                                                                                                                                                               |
| Dominants     | dense cover of:<br>fireweed                                                                                                                                                                                               | dense cover of:<br>lodgepole pine<br>trembling aspen<br>paper birch<br>common snowberry | dense cover of:<br>lodgepole pine<br>trembling aspen<br>paper birch<br>common snowberry | dense cover of:<br>lodgepole pine<br>trembling aspen<br>paper birch<br>common snowberry               | dense cover of:<br>Douglas-fir<br>lodgepole pine<br>trembling aspen<br>paper birch<br>red-stemmed<br>feathermoss                                                              | open stand of:<br>Douglas-fir<br>hybrid spruce<br>lodgepole pine<br>red-stemmed<br>feathermoss                                                                                         | open stand of:<br>Douglas-fir<br>hybrid spruce<br>red-stemmed<br>feathermoss                                                                                                                             |
| Associates    | raspberry<br>thimbleberry<br>showy aster<br>pearly everlasting                                                                                                                                                            | thimbleberry<br>fireweed<br>red-osier dogwood<br>birch-leaved spirea<br>Sitka alder     | thimbleberry<br>fireweed<br>red-osier dogwood<br>birch-leaved spirea<br>Sitka alder     | Douglas-fir<br>thimbleberry<br>soopollalie<br>red-osier dogwood<br>birch-leaved spirea<br>Sitka alder | hybrid spruce<br>thimbleberry<br>soopollalie<br>red-osier dogwood<br>birch-leaved spirea<br>common snowberry<br>prickly rose<br>Sitka alder<br>wild sarsaparilla<br>step moss | trembling aspen<br>paper birch<br>thimbleberry<br>soopollalie<br>red-osier dogwood<br>birch-leaved spirea<br>common snowberry<br>prickly rose<br>Sitka alder<br>ricegrass<br>step moss | lodgepole pine<br>trembling aspen<br>paper birch<br>thimbleberry<br>soopollalie<br>red-osier dogwood<br>birch-leaved spirea<br>common snowberry<br>prickly rose<br>Sitka alder<br>ricegrass<br>step moss |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (DeLong and Fahlman 1996). |                                                                                         |                                                                                         |                                                                                                       |                                                                                                                                                                               |                                                                                                                                                                                        |                                                                                                                                                                                                          |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

### SBSdh1/06 ST SxwFd - Thimbleberry

| Map Unit                                                                                                             | BEC/Site series # | Description                 | CB Code  |
|----------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------|----------|
| <b>ST</b>                                                                                                            | <b>SBSdh1/06</b>  | <b>SxwFd - Thimbleberry</b> | <b>5</b> |
| ST typically occurs on gentle, lower to level slopes with deep, medium-textured soils and a moisture receiving site. |                   |                             |          |

| Map Symbol    | ST2                                                                                                                                                                                                                       | ST3a                                                                                                                                     | ST3b                                                                                                                                     | ST4                                                                                                                                                                       | ST5                                                                                                                                                                                                        | ST6                                                                                                                                                                                                     | ST7                                                                                                                                                                                                    |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                                                                                                                | Low shrub                                                                                                                                | Tall shrub                                                                                                                               | Pole sapling                                                                                                                                                              | Young forest                                                                                                                                                                                               | Mature forest                                                                                                                                                                                           | Old forest                                                                                                                                                                                             |
| Dominants     | dense cover of:<br>fireweed                                                                                                                                                                                               | dense cover of:<br>trembling aspen<br>lodgepole pine<br>thimbleberry<br>black twinberry                                                  | dense cover of:<br>trembling aspen<br>lodgepole pine<br>thimbleberry<br>black twinberry                                                  | dense cover of:<br>trembling aspen<br>hybrid spruce<br>lodgepole pine<br>thimbleberry                                                                                     | dense cover of:<br>trembling aspen<br>hybrid spruce<br>lodgepole pine<br>thimbleberry                                                                                                                      | dense cover of:<br>trembling aspen<br>hybrid spruce<br>paper birch<br>thimbleberry                                                                                                                      | dense cover of:<br>Douglas-fir<br>hybrid spruce<br>thimbleberry                                                                                                                                        |
| Associates    | thimbleberry                                                                                                                                                                                                              | hybrid spruce<br>black cottonwood<br>paper birch<br>black twinberry<br>Sitka alder<br>red-osier dogwood<br>fireweed<br>wild sarsaparilla | hybrid spruce<br>black cottonwood<br>paper birch<br>Sitka alder<br>black twinberry<br>red-osier dogwood<br>fireweed<br>wild sarsaparilla | black cottonwood<br>paper birch<br>Sitka alder<br>red-osier dogwood<br>Douglas maple<br>black twinberry<br>bunchberry<br>rough-fruited<br>fairybells<br>wild sarsaparilla | black cottonwood<br>paper birch<br>Sitka alder<br>red-osier dogwood<br>highbush cranberry<br>Douglas maple<br>bunchberry<br>rough-fruited<br>fairybells<br>red-stemmed<br>feathermoss<br>wild sarsaparilla | black cottonwood<br>Douglas-fir<br>lodgepole pine<br>Sitka alder<br>red-osier dogwood<br>highbush cranberry<br>Douglas maple<br>bunchberry<br>rough-fruited<br>fairybells<br>red-stemmed<br>feathermoss | trembling aspen<br>paper birch<br>lodgepole pine<br>Sitka alder<br>red-osier dogwood<br>highbush cranberry<br>Douglas maple<br>bunchberry<br>rough-fruited<br>fairybells<br>red-stemmed<br>feathermoss |
| Comments      | Vegetation derived from Tete Jaune Cache, Terrestrial Ecosystem Mapping (Kernaghan et al 1997) and Draft Guide Insert for Site Identification and Interpretation for the Rocky Mountain Trench (Delong and Fahlman 1996). |                                                                                                                                          |                                                                                                                                          |                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                         |                                                                                                                                                                                                        |

## Columbia Basin BC Hydro Footprint Mapping Project

BC Hydro Reference Number: DFIM040

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### Generic Vegetated Sites

#### AC Avalanche chute Ecosystem Unit

| Map Unit                                                                                                                                                                                                                                                                                                                                         | Description                           | BEC              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------|
| <b>AC</b>                                                                                                                                                                                                                                                                                                                                        | <b>Avalanche chute Ecosystem Unit</b> | <b>All Zones</b> |
| AC typically occurs on significant slopes with coarse textured soils and is regularly disturbed by sliding snow. It is located in moist draws with concave surface shape on colluvial parent material; often in a mosaic with non-vegetated talus (TA) ecosystem unit. Mor (moder) humus forms and subxeric to mesic moisture regime are common. |                                       |                  |

| Map Symbol    | AC2                                                                                                                                 | AC3a                                                              | AC3b                                                              |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                          | Low shrub                                                         | Tall shrub                                                        |
| Dominants     | grasses<br>fireweed                                                                                                                 | Sitka alder<br>willows                                            | Sitka alder<br>willows                                            |
| Associates    | twinflower<br>Sitka valerian                                                                                                        | subalpine fir<br>false azalea<br>black elder<br>western meadowrue | subalpine fir<br>false azalea<br>black elder<br>western meadowrue |
| Comments      | The floristics of avalanche tracks can vary with the degree of disturbance, soil moisture, and location within the avalanche track. |                                                                   |                                                                   |

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### AR Avalanche Runout Zone

| Map Unit                                                                                                                                                                                                                                                                                                         | Description                  | BEC                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------|
| <b>AR</b>                                                                                                                                                                                                                                                                                                        | <b>Avalanche Runout Zone</b> | <b>All Zones</b><br>(except PPdh2) |
| AR typically occurs on gentle slopes with coarse textured soils and is regularly disturbed by sliding snow. It is located in moist draws with convex surface shape on colluvial parent material; often in a mosaic with non-vegetated talus (TA) ecosystem unit. Mesic to subhygric moisture regimes are common. |                              |                                    |

| Map Symbol    | AR2                                                                                                                                 | AR3a                                                                                                | AR3b                                                                                                |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Plant species | Grass-Forb                                                                                                                          | Low shrub                                                                                           | Tall shrub                                                                                          |
| Dominants     | grasses<br>cow parsnip<br>fireweed                                                                                                  | thimbleberry<br>willows<br>Sitka alder                                                              | Sitka alder<br>willows                                                                              |
| Associates    | stinging nettle<br>western meadowrue                                                                                                | subalpine fir<br>false azalea<br>black elder<br>cow parsnip<br>stinging nettle<br>western meadowrue | subalpine fir<br>false azalea<br>black elder<br>cow parsnip<br>stinging nettle<br>western meadowrue |
| Comments      | The floristics of avalanche tracks can vary with the degree of disturbance, soil moisture, and location within the avalanche track. |                                                                                                     |                                                                                                     |

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### GB Vegetated Gravel Bar

| Map Unit                                                                                                                                                                                                   | Description                 | BEC              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------|
| <b>GB</b>                                                                                                                                                                                                  | <b>Vegetated Gravel Bar</b> | <b>All Zones</b> |
| GB typically occurs on an elongated landform generated by waves and currents and usually running parallel to the shore. It is composed of unconsolidated small rounded cobbles, pebbles, stones, and sand. |                             |                  |

| Map Symbol    | GB2                                                                                                                                                                                  | GB3a                       | GB3b                       |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------|
| Plant species | Grass-Forb                                                                                                                                                                           | Low shrub                  | Tall shrub                 |
| Dominants     | grasses                                                                                                                                                                              | willows<br>mountain alder  | willows<br>mountain alder  |
| Associates    | willow herb<br>rock mosses                                                                                                                                                           | willow herb<br>rock mosses | willow herb<br>rock mosses |
| Comments      | These sites are regularly inundated by seasonal flooding that may change or maintain the structural stage. The floristics of gravel bars change with subzone and flooding frequency. |                            |                            |

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### WE Wetland

| Map Unit                                                                                                                                                                                                                                           | Description    | BEC              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------|
| <b>WE</b>                                                                                                                                                                                                                                          | <b>Wetland</b> | <b>All Zones</b> |
| WE typically occurs in areas where soils are water-saturated for a sufficient length of time such that excess water and resulting low soil oxygen levels are principal determinants of vegetation and soil development (MacKenzie and Moran 2004). |                |                  |

| Map Symbol    | WE2                                                                    | WE3a                                                    | WE3b                                                    |
|---------------|------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|
| Plant species | Grass-Forb                                                             | Low shrub                                               | Tall shrub                                              |
| Dominants     | sedges                                                                 | willows                                                 | mountain alder<br>willows                               |
| Associates    |                                                                        | ericaceous shrubs<br>sedges<br>brown mosses<br>sphagnum | ericaceous shrubs<br>sedges<br>brown mosses<br>sphagnum |
| Comments      | The floristics of wetlands vary with moisture, nutrients and location. |                                                         |                                                         |

## Anthropogenic and Non-Vegetated Sites

### CF Cultivated Field

| Map Unit                                                                                                                                                                                                                               | Description             | BEC              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------|
| <b>CF</b>                                                                                                                                                                                                                              | <b>Cultivated Field</b> | <b>All Zones</b> |
| CF is a flat or gently rolling, non-forested, open area which is subject to human agricultural practices including plowing, fertilization and non-native crop production; often resulting in long term soil and/or vegetation changes. |                         |                  |
| Comments:                                                                                                                                                                                                                              |                         |                  |

### CO Cultivated Orchard

| Map Unit                                                                                                                    | Description               | BEC              |
|-----------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------|
| <b>CO</b>                                                                                                                   | <b>Cultivated Orchard</b> | <b>All Zones</b> |
| CO is an agricultural area composed of single or multiple tree species planted in rows. Pruning maintains low, bushy trees. |                           |                  |
| Comments:                                                                                                                   |                           |                  |

### ES Exposed Soil

| Map Unit                                                                                                                                                                                                              | Description         | BEC              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
| <b>ES</b>                                                                                                                                                                                                             | <b>Exposed Soil</b> | <b>All Zones</b> |
| ES is an area of exposed soil including recent disturbances such as mud slides, debris torrents, river cutbanks, avalanches, or human made disturbances such as pipeline rights-of-way where vegetation cover is <5%. |                     |                  |
| Comments: Salt licks for ungulates can occur in this type. These can be an important focus for ungulate activity.                                                                                                     |                     |                  |

## Columbia Basin BC Hydro Footprint Mapping Project

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### GB Gravel Bar

| Map Unit                                                                                                                                                                                  | Description       | BEC              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------|
| <b>GB</b>                                                                                                                                                                                 | <b>Gravel Bar</b> | <b>All Zones</b> |
| GB is an elongated landform generated by waves and currents and usually running parallel to the shore. It is composed of unconsolidated small rounded cobbles, pebbles, stones, and sand. |                   |                  |
| Comments: This unit is usually non-vegetated (<5% vegetation). See generic vegetated units for GB2, GB3a, GB3b                                                                            |                   |                  |

### GP Gravel Pit

| Map Unit                                                      | Description       | BEC              |
|---------------------------------------------------------------|-------------------|------------------|
| <b>GP</b>                                                     | <b>Gravel Pit</b> | <b>All Zones</b> |
| GP is an area exposed through the removal of sand and gravel. |                   |                  |
| Comments:                                                     |                   |                  |

### LA Lake

| Map Unit                                                                                                                                   | Description | BEC              |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------|
| <b>LA</b>                                                                                                                                  | <b>Lake</b> | <b>All Zones</b> |
| LA is a naturally occurring body of water greater than 2 m deep in some portion. The boundary for the lake is the natural high water mark. |             |                  |
| Comments: Important for fish, waterfowl, and certain red and blue-listed species.                                                          |             |                  |

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### MZ Rubbly mine spoils

| Map Unit                                 | Description               | BEC              |
|------------------------------------------|---------------------------|------------------|
| <b>MZ</b>                                | <b>Rubbly mine spoils</b> | <b>All Zones</b> |
| MZ is discarded overburden or waste rock |                           |                  |
| Comments:                                |                           |                  |

### OW Shallow Open Water

| Map Unit                                                                                                                                                                           | Description               | BEC              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------|
| <b>OW</b>                                                                                                                                                                          | <b>Shallow Open Water</b> | <b>All Zones</b> |
| OW is a wetland composed of open, shallow (<2m deep) water and that lacks extensive emergent plant cover. It often contains submergent plants and is surrounded by wetlands units. |                           |                  |
| Comments: Important for waterfowl and certain red and blue-listed species, especially at lower elevations.                                                                         |                           |                  |

### PD Pond

| Map Unit                                                                                                                      | Description | BEC              |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|------------------|
| <b>PD</b>                                                                                                                     | <b>Pond</b> | <b>All Zones</b> |
| PD is a small body of water greater than 2m deep, but not large enough to be classified as a lake; generally less than 50 ha. |             |                  |
| Comments: Important for waterfowl and certain red and blue-listed species, especially at lower elevations.                    |             |                  |

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### RE Reservoir

| Map Unit                                                                                                                  | Description      | BEC              |
|---------------------------------------------------------------------------------------------------------------------------|------------------|------------------|
| <b>RE</b>                                                                                                                 | <b>Reservoir</b> | <b>All Zones</b> |
| An artificial basin created by the impoundment of water behind a human-made structure such as a dam, berm, dyke, or wall. |                  |                  |
| Comments:                                                                                                                 |                  |                  |

### RI River

| Map Unit                                                                                                                                                                                                                                                                                             | Description  | BEC              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------|
| <b>RI</b>                                                                                                                                                                                                                                                                                            | <b>River</b> | <b>All Zones</b> |
| RI is a watercourse formed when water flows between continuous, definable banks; flow may be intermittent or perennial. It does not include ephemeral flow where no channel with definable banks is present. This unit refers to the unvegetated (<5%vegetation) portion of the changing floodplain. |              |                  |
| Comments:                                                                                                                                                                                                                                                                                            |              |                  |

### RO Rock Outcrop

| Map Unit                                                                                                                                                     | Description         | BEC              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
| <b>RO</b>                                                                                                                                                    | <b>Rock Outcrop</b> | <b>All Zones</b> |
| RO is a gentle to steep bedrock escarpment and/or outcropping with little soil development and sparse (<5%) vegetation. Very xeric to xeric moisture regime. |                     |                  |
| Comments: There exists potential for many species of vascular plant and bryophytes that could be considered rare or important for biodiversity.              |                     |                  |

## Columbia Basin BC Hydro Footprint Mapping Project

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### TA Talus

| Map Unit                                                                                                                                                                                  | Description  | BEC              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------|
| <b>TA</b>                                                                                                                                                                                 | <b>Talus</b> | <b>All Zones</b> |
| TA is a gravitational deposit of materials of any size on or at the base of a slope. The steepness is determined by the angle of repose of the colluvial material (<5% vegetation cover). |              |                  |
| Comments: Vegetation cover will vary with the position on the slope and the amount of active colluviation within the talus field.                                                         |              |                  |

### UR Urban/ Suburban

| Map Unit                                                                                                                                                                                                                                                                          | Description            | BEC              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------|
| <b>UR</b>                                                                                                                                                                                                                                                                         | <b>Urban/ Suburban</b> | <b>All Zones</b> |
| UR is an area in which residences and other human developments form an almost continuous covering of the landscape. These areas include cities and towns, subdivisions, powerlines, commercial and industrial parks and similar developments both inside and outside city limits. |                        |                  |
| Comments: Vegetation may be kept at a low structural stage such as under powerlines.                                                                                                                                                                                              |                        |                  |

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Map Legend

| BEC zone | variant | Site series alpha | Site sereis number | CB code | alternate CB code | CDN wetland code | Structural stage | Name                                                                                                                                                                                                                                                            |
|----------|---------|-------------------|--------------------|---------|-------------------|------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Various  | various |                   |                    | 5       |                   |                  |                  | Eastside Interior Mixed Conifer Forest                                                                                                                                                                                                                          |
| Various  | various |                   |                    | 7       |                   |                  |                  | Ponderosa pine forest and woodlands                                                                                                                                                                                                                             |
| Various  | various |                   |                    | 15      |                   |                  |                  | Eastside Grasslands                                                                                                                                                                                                                                             |
| Various  | various |                   |                    | 16      |                   |                  |                  | Shrub Steppe                                                                                                                                                                                                                                                    |
| Various  | various |                   |                    | 19      |                   |                  |                  | Agriculture, Pasture and Mixed Environs                                                                                                                                                                                                                         |
| Various  | various |                   |                    | 20      |                   |                  |                  | Urban and Mixed Environs                                                                                                                                                                                                                                        |
| Various  | various |                   |                    | 21      |                   |                  |                  | Open water, lakes rivers and streams                                                                                                                                                                                                                            |
| Various  | various |                   |                    | 22      |                   |                  | 2                | Herbaceous wetlands                                                                                                                                                                                                                                             |
| Various  | various |                   |                    | 24      |                   |                  |                  | Montane Coniferous Wetlands                                                                                                                                                                                                                                     |
| Various  | various |                   |                    | 25      |                   |                  |                  | Eastside Interior Riparian Wetlands (PPdh2)                                                                                                                                                                                                                     |
| Various  | various |                   |                    | 98      |                   |                  | 1                | Rock                                                                                                                                                                                                                                                            |
| All      | all     |                   |                    | 22      | 24                | Fn               |                  | Fen                                                                                                                                                                                                                                                             |
| All      | all     |                   |                    | 22      |                   | Ms               | 2                | Marsh                                                                                                                                                                                                                                                           |
| All      | all     |                   |                    | 24      |                   | Sw               |                  | Swamp                                                                                                                                                                                                                                                           |
| All      | all     |                   |                    |         |                   | Ws               |                  | Shallow-waters                                                                                                                                                                                                                                                  |
| All      | all     |                   |                    |         |                   | Df               |                  | Flood Associations                                                                                                                                                                                                                                              |
| All      | all     |                   |                    |         |                   | Tn               | 3a,3b            | Transition associations- flooded disclimaxes                                                                                                                                                                                                                    |
| All      | all     | AC                | 00                 |         |                   |                  | 2,3a,3b          | Avalanche chute                                                                                                                                                                                                                                                 |
| All      | all     | AR                | 00                 |         |                   |                  | 2,3a,3b          | Avalanche run-out zone                                                                                                                                                                                                                                          |
| All      | all     | CF                | 00                 | 19      |                   |                  |                  | A flat or gently rolling, non-forested, open area that is subject to human agricultural practices (including plowing, fertilization and non-native crop production) which often result in long-term soil and vegetation changes.                                |
| All      | all     | CO                | 00                 | 19      |                   |                  |                  | An agricultural area composed of single or multiple tree species planted in rows. Pruning maintains low, bushy trees.                                                                                                                                           |
| All      | all     | ES                | 00                 |         |                   |                  | 1                | Any area of exposed soil that is not included in any of the other definitions. It includes areas of recent disturbance, such as mud slides, debris torrents, avalanches, and human-made disturbances (e.g., pipeline rights-of-way) where vegetation cover is l |
| All      | all     | GB                | 00                 |         |                   | Df               | 1,2,3a,3b        | An elongated landform generated by waves and currents and usually running parallel to the shore. It is composed of unconsolidated small rounded cobbles, pebbles, stones, and sand.                                                                             |
| All      | all     | GP                | 00                 |         |                   |                  |                  | An area exposed through the removal of sand and gravel.2                                                                                                                                                                                                        |

Map Legend

|     |     |     |     |    |    |          |         |                                                                                                                                                                                                                                                                                       |
|-----|-----|-----|-----|----|----|----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All | all | LA  | 00  | 21 |    |          |         | A naturally occurring static body of water, greater than 2 m deep in some portion. The boundary for the lake is the natural high water mark.2                                                                                                                                         |
| All | all | MZ  | 00  |    |    |          |         | Discarded overburden or waste rock moved so that ore can be extracted in a mining operation.2                                                                                                                                                                                         |
| All | all | OW  | 00  | 21 |    | Ws       |         | A wetland composed of permanent shallow open water and lacking extensive emergent plant cover. The water is less than 2 m deep. (If vegetated, these units should developed into site series groups for interpretation.)                                                              |
| All | all | PD  | 00  | 21 |    |          |         | A small body of water greater than 2 m deep, but not large enough to be classified as a lake (e.g., less than 50 ha).                                                                                                                                                                 |
| All | all | RE  | 00  | 21 |    |          |         | An artificial basin created by the impoundment of water behind a human-made structure such as a dam, berm, dyke, or wall.2                                                                                                                                                            |
| All | all | RI  | 00  |    |    |          |         | A watercourse formed when water flows between continuous, definable banks. The flow may be intermittent or perennial. An area that has an ephemeral flow and no channel with definable banks is not considered a river.2                                                              |
| All | all | RO  | 00  | 98 |    |          | 1       | A gentle to steep, bedrock escarpment or outcropping, with little soil development and sparse vegetative cover.                                                                                                                                                                       |
| All | all | TA  | 00  | 98 |    |          | 1       | Angular rock fragments of any size accumulated at the foot of steep rock slopes as a result of successive rock falls. It is a type of colluvium.2, 4                                                                                                                                  |
| All | all | UR  | 00  | 20 |    |          |         | An area in which residences and other human developments form an almost continuous covering of the landscape. These areas include cities and towns, subdivisions, commercial and industrial parks, and similar developments both inside and outside city limits including gravel pits |
| All | all | WE  | 00  | 22 | 24 | Ms,Fn,Sw | 2,3a,3b | generic wetland, lacks tree cover                                                                                                                                                                                                                                                     |
| ICH | dw1 | RFa | 01a | 5  |    |          |         | CwFd - Falsebox, SX-SM phase                                                                                                                                                                                                                                                          |
| ICH | dw1 | RFb | 01b | 5  |    |          |         | CwFd - Falsebox, M-SHG phase                                                                                                                                                                                                                                                          |
| ICH | dw1 | DO  | 02  | 5  | 98 |          |         | FdPy - Oregon grape - Parsley fern                                                                                                                                                                                                                                                    |
| ICH | dw1 | HD  | 03  | 5  |    | Df       |         | CwHw - White pine - Devil's club                                                                                                                                                                                                                                                      |
| ICH | dw1 | RD  | 04  | 5  | 24 | Tn,Df    | 3a,3b   | CwHw - Devil's club - Lady fern                                                                                                                                                                                                                                                       |
| ICH | mm  | HM  | 01  | 5  |    |          |         | HwCw - Spruce - Step moss                                                                                                                                                                                                                                                             |
| ICH | mm  | RS  | 02  | 5  | 98 |          |         | CwSxw - Soopolallie                                                                                                                                                                                                                                                                   |
| ICH | mm  | HS  | 03  | 5  |    |          |         | HwCw - Step moss                                                                                                                                                                                                                                                                      |
| ICH | mm  | HO  | 04  | 5  |    |          |         | CwHw - Oak fern                                                                                                                                                                                                                                                                       |
| ICH | mm  | RD  | 05  | 5  |    |          |         | CwHw - Devil's club - Oak fern                                                                                                                                                                                                                                                        |
| ICH | mm  | DH  | 06  | 5  | 24 | Tn,Df,Sw | 3a,3b   | CwSxw - Devil's club - Horsetail                                                                                                                                                                                                                                                      |
| ICH | mm  | BS  | 07  | 24 |    | Fn       |         | SbPI - Bog-laurel - Sphagnum                                                                                                                                                                                                                                                          |
| ICH | mm  | RC  | 08  | 24 |    | Sw,Fn    |         | CwSxw - Skunk cabbage - Sphagnum                                                                                                                                                                                                                                                      |
| ICH | mw1 | HF  | 01  | 5  |    |          |         | HwCw - Falsebox - Feathermoss                                                                                                                                                                                                                                                         |

Map Legend

|     |     |    |          |    |    |             |       |                                                                       |
|-----|-----|----|----------|----|----|-------------|-------|-----------------------------------------------------------------------|
| ICH | mw1 | LJ | 02       | 5  |    |             |       | Pl - Juniper - Twinflower                                             |
| ICH | mw1 | DS | 04       | 5  |    |             |       | CwFd - Soopolallie - Douglas maple                                    |
| ICH | mw1 | RD | 05       | 5  |    |             |       | CwHw - Devil's club - Lady fern                                       |
| ICH | mw1 | RH | 07       | 5  | 24 | Tn,Sw,Df    | 3a,3b | CwHw - Horsetail                                                      |
| ICH | mw2 | HF | 01       | 5  |    |             |       | HwCw - Falsebox - Feathermoss                                         |
| ICH | mw2 | RC | 02       | 5  | 98 |             |       | Rhacomitrium - Cladonia                                               |
| ICH | mw2 | DF | 03       | 5  |    |             |       | FdCw - Falsebox - Prince's pine                                       |
| ICH | mw2 | RF | 04       | 5  |    |             |       | CwFd - Falsebox                                                       |
| ICH | mw2 | HO | 05       | 5  |    |             |       | CwHw - Oak fern - Foamflower                                          |
| ICH | mw2 | RD | 06       | 5  |    |             | 3a,3b | CwHw - Devil's club - Lady fern                                       |
| ICH | mw2 | RH | 07       | 5  | 24 | Df          | 3a,3b | CwHw - Horsetail                                                      |
| ICH | mw2 | RS | 08       | 5  | 24 | Fn,Df,Sw    | 3a,3b | CwSxw - Skunk cabbage                                                 |
| ICH | mw2 | BS | 09       | 22 | 24 | Fn,Sw       |       | Bluejoint - Sedge                                                     |
| ICH | mw2 | XX | 06/07/08 | 5  |    | Df          | 3a,3b | complex of wet valley bottom site series occuring along lake or river |
| ICH | mw2 | XY | 07/08    | 5  |    | Df          |       | complex of wet valley bottom site series (80% 07, 20% 08)             |
| ICH | mw3 | HF | 01       | 5  |    |             |       | HwCw - Falsebox - Feathermoss                                         |
| ICH | mw3 | DJ | 02       | 98 |    |             |       | Fd - Juniper - Cladina                                                |
| ICH | mw3 | RS | 04       | 5  |    |             |       | CwFd - Soopolallie - Twinflower                                       |
| ICH | mw3 | RF | 05       | 5  |    |             |       | CwFd - Falsebox                                                       |
| ICH | mw3 | HO | 06       | 5  |    |             |       | CwHw - Oak fern                                                       |
| ICH | mw3 | RD | 07       | 5  |    |             | 3a,3b | CwHw - Devil's club - Lady fern                                       |
| ICH | mw3 | RC | 08       | 5  | 24 | Df          | 3a,3b | CwSxw - Skunk cabbage                                                 |
| ICH | mw3 | SE | 09       | 22 |    | Fn,Ms       |       | Sedge - Sphagnum                                                      |
| ICH | vk1 | RD | 01       | 5  |    |             |       | CwHw - Devil's club - Lady fern                                       |
| ICH | vk1 | HF | 03       | 5  |    |             |       | HwCw - Falsebox - Feathermoss                                         |
| ICH | vk1 | HS | 04       | 5  |    |             |       | CwHw - Oak fern - Spiny wood fern                                     |
| ICH | vk1 | RH | 05       | 5  | 24 | Df,Fn,Tn    |       | CwSxw - Devil's club - Horsetail                                      |
| ICH | vk1 | RC | 06       | 5  | 24 | Df,Fn,Sw    | 3a,3b | CwSxw - Skunk cabbage                                                 |
| ICH | wk1 | HO | 01       | 5  |    |             |       | CwHw - Oak fern                                                       |
| ICH | wk1 | RL | 02       | 5  | 98 |             |       | Rhacomitrium - Cladonia                                               |
| ICH | wk1 | HF | 04       | 5  |    |             |       | HwCw - Falsebox - Feathermoss                                         |
| ICH | wk1 | RD | 05       | 5  |    |             |       | CwHw - Devil's club - Lady fern                                       |
| ICH | wk1 | RH | 06       | 5  |    | Tn          |       | CwSxw - Devil's club - Horsetail                                      |
| ICH | wk1 | CD | 07       | 5  | 24 | Df,Sw,Tn,Fn | 3a,3b | Act - Dogwood - Twinberry                                             |
| ICH | wk1 | RC | 08       | 24 |    | Tn, Sw,Df   | 3a,3b | CwSxw - Skunk cabbage                                                 |
| ICH | wk1 | SS | 09       | 22 |    | Fn,Ms       |       | Sedge - Sphagnum                                                      |
| ICH | xw  | DN | 02       | 5  |    |             |       | FdPy - Mallow ninebark - bluebunch wheatgrass                         |

# Map Legend

|     |     |     |     |    |    |       |       |                                                                         |
|-----|-----|-----|-----|----|----|-------|-------|-------------------------------------------------------------------------|
| ICH | xw  | DO  | 03  | 5  |    |       |       | FdPy - Oregon grape - Birch-leaved spirea                               |
| ICH | xw  | DP  | 01  | 5  |    |       |       | Fd - Prince's pine                                                      |
| ICH | xw  | HS  | 05  | 5  |    |       |       | CwHw - Prince's pine - wild sarsaparilla                                |
| IDF | dm2 | DT  | 01  | 5  |    |       |       | FdPI - Pinegrass - Twinflower                                           |
| IDF | dm2 | AW  | 02  | 5  | 16 |       |       | Antelope-brush - Bluebunch wheatgrass                                   |
| IDF | dm2 | DS  | 03  | 5  |    |       |       | Fd - Snowberry - Balsamroot                                             |
| IDF | dm2 | SP  | 04  | 5  |    |       |       | FdLw - Spruce - Pinegrass                                               |
| IDF | dm2 | SS  | 05  | 5  |    | Df    |       | SxwAt - Sarsaparilla                                                    |
| IDF | dm2 | BH  | 06  | 22 | 24 | Fn,Df |       | Scrub birch - Horsetail                                                 |
| IDF | dm2 | SH  | 07  | 24 |    | Df    | 3a,3b | Sxw - Horsetail                                                         |
| IDF | un  | BJ  | 02  | 98 |    |       |       | Bluebunch wheatgrass Junegrass                                          |
| IDF | un  | FW  | 03  | 5  | 7  |       |       | Fd, Py - Bluebunch wheatgrass-Junegrass                                 |
| IDF | un  | PS  | 04  | 5  |    |       |       | Py, Fd -Snowberry                                                       |
| IDF | un  | FS  | 05  | 5  |    |       |       | Fd - Common Snowberry                                                   |
| IDF | un  | RH  | 06  | 5  |    | Df    |       | Cw - Hooker's Fairy Bells                                               |
| PP  | dh2 | PW  | 01  | 7  |    |       |       | Py - Bluebunch wheatgrass - Junegrass                                   |
| PP  | dh2 | WJa | 02a | 15 |    |       |       | Bluebunch wheatgrass - Junegrass steep xeric to subxeric phase          |
| PP  | dh2 | WJb | 02b | 15 |    |       |       | Bluebunch wheatgrass - Junegrass -gentle to mod submesic to mesic phase |
| PP  | dh2 | AR  | 03  | 7  |    | Df    |       | PyAt Rose Solomon's Seal                                                |
| PP  | dh2 | CD  | 04  | 25 |    | Df    | 3a,3b | Act-Dogwood - Nootka Rose                                               |
| SBS | dh1 | SR  | 01  | 5  |    |       |       | SxwFd - Ricegrass                                                       |
| SBS | dh1 | ST  | 06  | 5  |    |       |       | SxwFd - Thimbleberry                                                    |
| SBS | dh1 | SH  | 07  | 5  | 24 | Tn    | 3a,3b | Sxw - Horsetail                                                         |
| SBS | dh1 | BB  | 08  | 24 |    | Fn    |       | Sb - Scrub birch - Sedge                                                |

Appendix 3. Summary of characteristics for wetland and related ecosystem Site Classes

| Site/Realm Group                                 | Site Class          | Environmental features                                                                                       | Cover types                 | Species groups                                          |
|--------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------------|
| <b>Wetland Group</b>                             | Fens (Fn)           | <b><i>Wet or Very Wet SMR</i></b><br>Groundwater-fed<br>pH > 5.0<br>> 40cm fibric/mesic peat                 | Graminoid or low shrub      | Deciduous shrubs, Sedges, and brown mosses              |
|                                                  | Marshes (Ms)        | Mineral soils or well-humified peat<br>Protracted shallow flooding (0.1-0.2 m)                               | Graminoid or forb           | Large emergent sedge, grass, forb, or horsetail species |
|                                                  | Swamps (Sw)         | Mineral soils or well-humified peat<br>Temporary shallow flooding (0.1-1.0m)<br>Significant water flow       | Tall shrub or forested      | Conifers, willows, alders, forbs, grasses leafy mosses  |
|                                                  | Shallow waters (Ws) | Permanent deep flooding (0.5-2 m)                                                                            | Aquatic                     | Aquatic species<br>Emergent vegetation<br>< 10% cover   |
| <b>Flood Group of Terrestrial Realm</b>          | High bench (Df)     | <b><i>Riparian flood zone</i></b><br>Benches above normal waterflow<br>Brief flood period                    | Coniferous Forested         | Upland species of seepage sites                         |
|                                                  | Mid bench (Df)      | Elevated benches flooded most years for < 21 days<br>Areas of sedimentation                                  | Deciduous treed or forested | Flood-tolerant deciduous trees and shrubs               |
|                                                  | Low bench (Df)      | Site directly adjacent to watercourse<br>Annual flood > 21 days<br>Significant annual erosion and deposition | Tall deciduous shrub        | Flood-tolerant shrubs                                   |
| <b>Transition Classes from Terrestrial Realm</b> | Shrub-carr (Tn)     | <b><i>“Special” factor</i></b><br>Frost prone depression with fine to medium-textured moist soils            | Low shrub                   | Deciduous low shrubs, grasses, and forbs                |